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ABSTRACT

The Instructional Environment System-II (formerly known as the Instructional Environment Scale) is designed to assist in systematically analyzing a target student's instructional environment, including both school and home contexts, and instructional needs. Through observation and interviewing educators systematically describe the presence and importance of classroom and home correlates of academic achievement for the target students, which in turn enables them to design an intervention. The focus is on manipulating the classroom or home context to elicit more appropriate responses from the student. The manual's first section includes the information and directions needed to use the system. This section provides a rationale, a description of the system's 8 forms and 17 components, and guidelines for interpreting data and planning interventions. The system's components include: instructional match, teacher expectations, classroom environment, instructional presentation, cognitive emphasis, motivational strategies, relevant practice, informed feedback, academic engaged time, adaptive instruction, progress evaluation, student understanding, expectations and attributions, discipline orientation, home affective environment, parent participation, and structure for learning. The manual's second section includes a review of the literature in support of the system and a description of the system's development and technical characteristics. Appendixes contain system forms, descriptions of the system's components, supplemental interview questions, and a list of print resources. (Contains almost 400 references.) (JDD)

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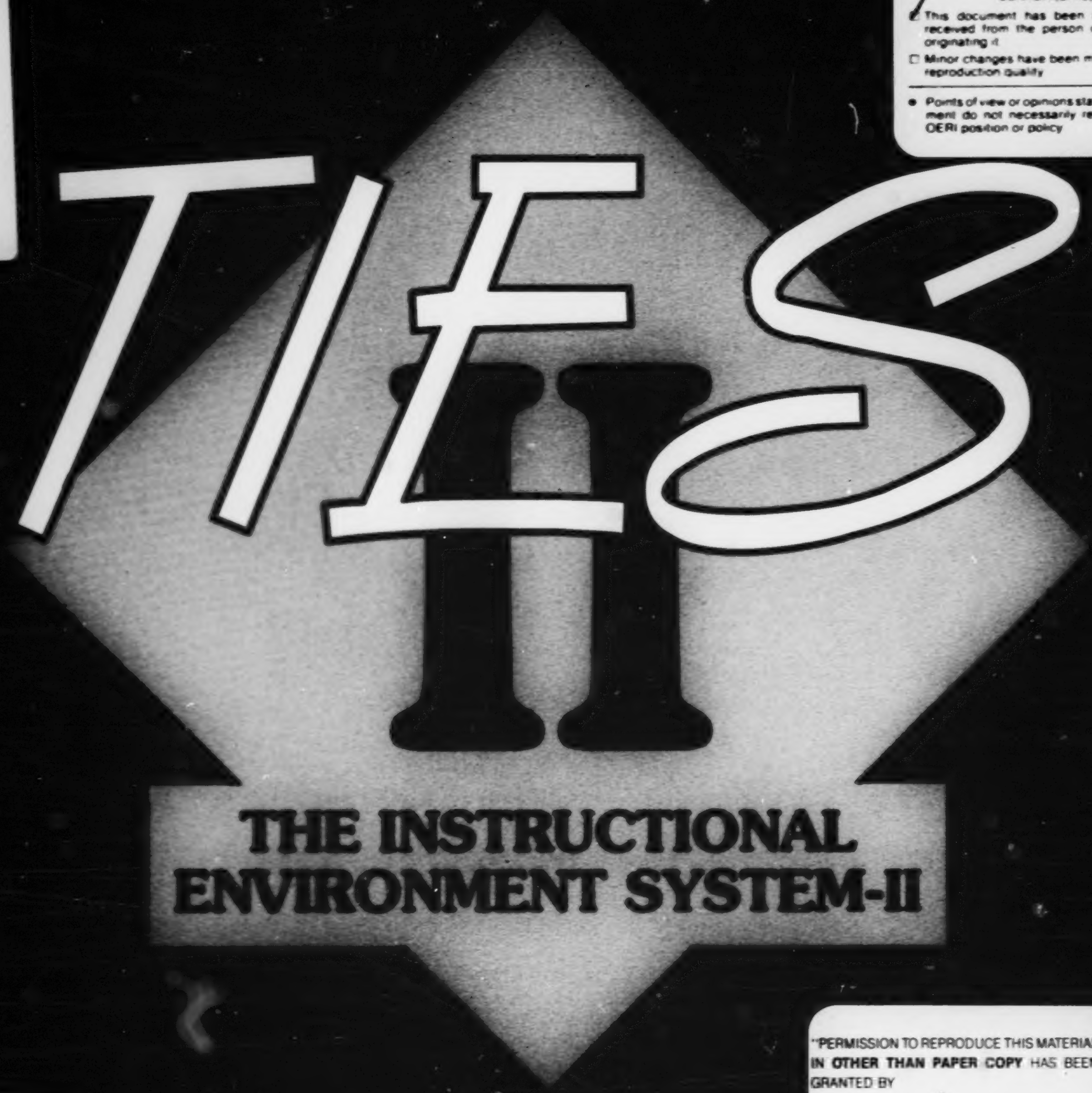

THE INSTRUCTIONAL ENVIRONMENT SYSTEM-II

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A System to Identify a Student's Instructional Needs

by

James Ysseldyke, Ph.D. • Sandra Christenson, Ph.D.
University of Minnesota

TIES-II

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PREFACE

No student assessment can be considered complete without an assessment of the student's instructional needs in the context of classrooms. This contention appears so obvious that few would disagree with it. Yet, in practice, most psychoeducational decisions for a student are made without careful, systematic analysis of the instructional environment.

The Instructional Environment System-II (*TIES-II*), a revision of *TIES* (Ysseldyke & Christenson, 1986), is designed to assist education professionals in a systematic analysis of a target student's instructional environment, which includes both school and home contexts. The name of this tool has changed with this second edition. The first edition of *TIES* was called *The Instructional Environment Scale.* We have changed *TIES* from a "Scale" to a "**System**" for gathering data on both the instructional and home environments.

Through observation and interviewing, educators systematically describe the presence and importance of classroom and home correlates of academic achievement for the target student. This systematic gathering of relevant information enables education professionals to design an intervention to address the referring teacher's concern and to make the referred student more competent.

Two principles have guided the development of this system: (1) an appreciation for the complexity of environmental contexts for individuals, and (2) the focus on meeting student needs by encouraging adults to facilitate an appropriate response from the student.

The complexity of the environment is well illustrated by Calfee's description:

> *We watch an ant make his laborious way across a wind- and wave-molded beach. He moves ahead, angles to the right to ease his climb up a steep dunelet, detours around a pebble, stops for a moment to exchange information with a compatriot. Thus, he makes his weaving, halting way back to his home . . . . I sketched the path on a piece of paper. It is a sequence of irregular, angular segments—not quite a random walk, for it has an underlying sense of direction, of aiming toward a goal.*
>
> *I showed the unlabeled sketch to a friend. Whose path is it? An expert skier, perhaps, slaloming down a steep and somewhat rocky slope, or a sloop, beating upwind in a channel dotted with islands or shoals. Perhaps it is a path in a more abstract space: the course of [the] search of a student seeking the proof in a theorem in geometry.*
>
> *Whoever made the path, and in whatever space, why is it not straight; why does it not aim directly from its starting point to its goal? . . .*
>
> *Viewed as a geometric figure, the ant's path is irregular, complex, hard to describe. But its complexity is really a complexity in [the] surface of the beach, not a complexity in the ant . . . .*

> *An ant [and likewise a man], viewed as a behaving system, is quite simple. The apparent complexity of his behavior over time is largely a reflection of the complexity of the environment in which he finds himself (Calfee, 1981, p. 36).*

The 17 *TIES-II* components provide a way for educators to organize empirically validated environment influences for a target student.

The focus in *TIES-II* is on the referred student. The question for the important adults in the referred student's life is "How can the classroom or home context be manipulated to elicit more appropriate responses from the student?" Students learn when they are constructively active and engaged. David Seeley, in his book *Education Through Partnership*, has reminded us that "the product of education—learning—is not produced by schools, but by students with the help and support of schools, parents, peers, and other community resources" (1985, p. 65).

The *TIES-II* manual is organized into two sections: an Implementation Section and a Research Section. In the Implementation Section, we have included all of the information and directions you need to use the system. In the Research Section, we have included an extensive review of the literature in support of this system and a description of the development of this system and its technical characteristics.

The first chapter, Rationale and Overview, includes a description of the rationale for assessing the student's instructional needs in context and the way in which the system is organzied. In chapter 2, Methodology, the *TIES-II* methodology is explained, including who uses *TIES-II*, a description of the eight forms that comprise the system, and a description of each of the 17 *TIES-II* components. In Chapter 3, Putting the Pieces Together, we describe guidelines for interpreting *TIES-II* data and engaging in the collaborative intervention planning process.

The second section of this manual, the Research Section, includes two chapters. In Chapter 4, System Development and Technical Characteristics, we describe how *TIES-II* was developed and provide information on the technical adequacy of the system. And, based on the suggestions of several reviewers, we have provided an integrative literature review of instructional and home correlates of academic achievement in Chapter 5, Correlates of Academic Achievement. In this chapter we provide the information which supports the content validity of the system.

In Appendix A are four of the forms that are used to gather data and engage in collaborative planning: (1) the Observation Record, (2) the Teacher Interview Record, (3) the Student Interview Record, and (4) the Intervention Planning Form. Users may reproduce and use these in assessing the instructional environment. The other four forms are available for purchase separately, although a "starter" forms set of 15 of each is included with the *TIES-II* manual. These forms include the: (1) Parent Interview Record, (2) the Instructional Environment Form, (3) the Home Support for Learning Form, and (4) the Instructional Needs Checklist.

In Appendix B we have provided descriptors for each of the *TIES-II* components. These are detailed lists of things to look for in making judgments about each of the components. Users of *TIES* have found the descriptor lists very helpful in thinking about alternative ways to intervene in order to improve instruction for individual students. In Appendices C and D we provide sets of additional teacher interview and student interview questions. View these as one more piece of evidence that *TIES-II* is to be used in a flexible manner. The questions here can be used in addition to or in place of those on the forms. Appendix E provides a list of resources that may be helpful when using *TIES-II*. We have listed resources on consultation, interviewing, observation, home-school relationships, and instructional intervention.

We are absolutely committed to the belief that the bottom line in assessment is improvement of outcomes for individual students. It is our hope that users of *TIES-II* will find it of considerable assistance in assessing instructional environments and improving results for their students.

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Section 1

IMPLEMENTATION

1

RATIONALE AND OVERVIEW

In this section we describe the reasons why professionals engage in assessment of instructional environments. You will learn why we think assessment of the instructional environment is a necessary component of intervention planning and psychoeducational decision making. You will learn why we think assessment is incomplete until the assessment-intervention link has been achieved. In addition, you will be introduced to the purposes and the data-gathering tools of *TIES-II*, and how **not** to use *TIES-II*.

What is *TIES-II*?

TIES-II is a system to assess the instructional needs of an individual student within the learning environment. *TIES-II* is a systematic way to observe and interview teachers, parents, and the student in relation to the teacher's referral concern. Multimethods (observation, interviewing, analysis of permanent products) and multisources (parents, teachers, students) are used to organize information relevant to intervention planning. *TIES-II* can be used in multiple settings (regular classrooms, different content areas, special education, homes).

TIES-II is a system to assess learning, not the learner. Learning and behavior are not independent of learners or their surroundings. We believe learning is a function of the learner's response to his or her environment. Drawing on the work of Tyler (1950), we conceptualize instruction as the intentional manipulation of the learning environment to facilitate an appropriate response from the student.

The belief that diagnostic personnel ought to assess the learning environment in addition to assessing the learner is based on the belief that student performance in school is a function of an interaction between the student and the learning or instructional environment. We view **instructional environments** broadly as those contexts in which learning takes place. Instructional environments include schools, but are not limited to schools. In fact, we like to think of school contexts, home contexts, and home and school contexts.

TIES-II is a system to assist educators in the design of an instructional intervention for an individual student. Teachers refer students for intervention assistance because they want a change for the student, for other students, and for themselves. *TIES-II* should be used to answer the question, "What can be done by educators and/or parents to improve this student's school performance?" To paraphrase

Tyler (1950), the question becomes, "What can be done to intentionally manipulate the classroom or home environment to produce a more appropriate response from the student?" *TIES-II* is not to be used to say what is wrong with the student, the classroom task, the teacher's instructional strategy, or parent support for learning. *TIES-II* is used to identify ways to change instruction—or the learning environment—so that the student is responding to instruction more positively.

What is Meant by the Instructional Environment?

Bronfenbrenner (1979) provides a thorough description of the multiple influences on child development outcomes. Stated most simply, there are four levels that influence child outcomes:

- Microsystem,
- Mesosystem,
- Exosystem, and
- Macrosystem.

Microsystem refers to the immediate environmental context in which the child resides and which influences the behavior of the child. Typical microsystems for children and youth include school, classrooms, home, playgrounds, and neighborhoods. Mesosystem refers to the links between two microsystems, such as the home-school relationship or coordination between regular-special education classrooms. Exosystem refers to the outside influences and/or demands in adults lives that affect children, such as a teacher's home life (e.g., marital conflict) or a parent's work demands. Macrosystem influences are the cultural beliefs, patterns, or institutional policies that affect the behavior of an individual.

For the purposes of intervention planning with *TIES-II*, we believe educators and parents need to focus their primary efforts on the microsystems of school (made up of classrooms) and home. Specifically, the child's instructional needs in relation to the classroom context and in relation to the home as a source of support for classroom learning should be of primary concern when designing interventions. The important mesosystems are the home-school relationship; specifically, the degree to which the home and school collaborate to support student learning, and teacher-teacher interactions, or the degree to which educators collaborate to support student learning. The degree to which any intervention is successful will be moderated by exosystem and macrosystem influences. However, educators simply have less direct control over these influences. These influences **may** affect intervention selection; some interventions may be more feasible and/or effective given exosystem influences in a child's life. Also, as intervention assistance teams (also referred to as instructional support teams, student-staff support teams, teacher assistance teams, prereferral intervention teams, or school-wide assistance teams) develop community partnerships, exosystem and macrosystem influences may be more feasible to address.

The instructional environment is defined broadly to include those contexts in which learning takes place. Drawing from the seminal work of Bronfenbrenner, we conceptualize the instructional environment in *TIES-II* as school, home, and school-home contexts. We believe it is important for educators and parents to think of the concept of the **total learning environment**. Children and youth learn in many contexts—or microsystems—but the home and school contexts are their primary learning environments. The total learning environment refers to accounting for the powerful effect of both home and school on children's learning. It refers to the notion of shared responsibility between educators and parents for educating and socializing youth. Fantini (1983) contends that to separate home and school is miseducative. Others (e.g., Hess & Holloway, 1984) have shown that collaboration between home and school for instructing students produces greater gains than either system can accomplish separately.

TIES-II is a system that focuses on what a student needs to produce a more appropriate response within his or her total learning environment—the classroom and home. An advantage of the total learning environment concept is that blame is circumvented. Blaming occurs when something is awry in a system, and blaming occurs between home and school when something is awry in the instructional environment or total learning environment for a student. Without the total learning environment concept, it is much easier for educators to point the finger at the other system, "the home," or for parents to point the finger at the other system, "the school," when the child is having learning or behavior problems. Rather than engage in blaming the other system, it is important to focus on a common goal—on what brings the two microsystems together. This is the student.

In his book, *Education Through Partnership,* Seeley (1985) contends that learning is produced by what students do in school with the support of parents, educators, and community individuals. We advocate that parents and educators need to focus their intervention planning efforts on meeting the needs of the student. To do so requires an understanding of the student's needs within the instructional environment. To do so also requires creating a partnership for student learning, or what Seeley has defined as a common effort toward a common goal.

Why Assess the Student's Instructional Environment?

We believe there are four reasons why educators need to assess instructional environments: (1) there are many factors that influence academic outcomes for students, (2) learning does not occur in a vacuum, (3) there are limits to the kind of information we can gain from assessing only the learner, and (4) it is important to put content in instructional consultation.

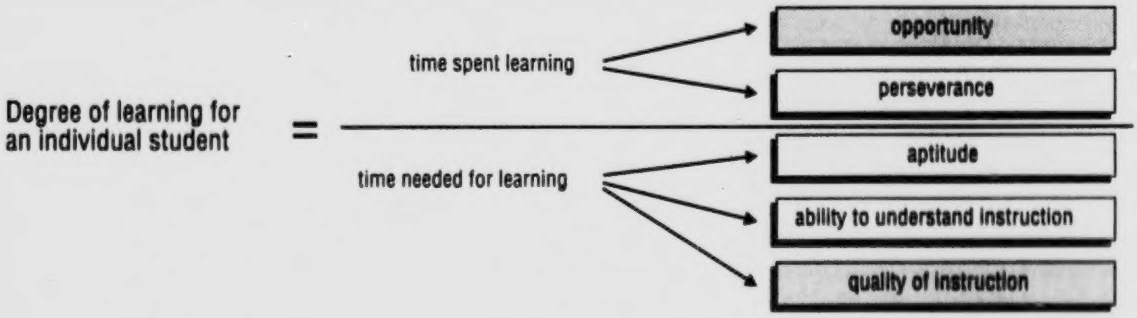
■ Reason One

Because Many Factors Influence Academic Outcomes

There are many reasons why children fail in school or perform less well than desired. Carroll's model of school learning, Walberg's meta-analytic study, and our review of factors associated with student academic outcomes support this point.

CARROLL'S MODEL OF SCHOOL LEARNING. In 1963, Carroll proposed a model of school learning with the hope that educational psychologists could state parameters for different types of learning by students with different characteristics under different instructional conditions. According to his model, the amount a student learns is a function of the time the student actually spends learning divided by the amount of time the student actually needs to learn (see Figure 1-1). The amount of time spent learning is influenced by **opportunity**, the time allowed for learning which involves "officially" scheduled time by school districts as well as the amount of time allocated by teachers and instructional programs, and

Figure 1-1
Carroll's Model of School Learning



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perseverance, the amount of time the student is willing to engage actively in learning, particularly when the task becomes more difficult and the student may be facing failure. The time needed to learn is dependent upon the student's **aptitude, ability to understand instruction**, and **quality of instruction**. Aptitude is the amount of time needed to learn a task (i.e., the student's learning rate) under optimal conditions, where "optimal conditions" refers to both student perseverance and opportunity to learn a specific task to a specified criterion of success.

According to Carroll, a student's aptitude is specific to the task under consideration and is a function of numerous other variables. It may depend upon the amount of prior learning for a specific task or upon student characteristics that vary with a variety of tasks. Thus, Carroll speaks of "aptitude for learning this task" (Carroll, 1985, p. 63). Ability to understand instruction is seen as a function of the student's general intelligence and the adequacy with which tasks are presented. Carroll defines quality of instruction as the nature, objectives, content, and hierarchical structure of teacher-provided instruction and instructional materials. Quality of instruction varies according to the clarity of task demands, adequacy of task presentation, adequacy of subtask sequencing and pacing, and the degree to which the learner's needs and characteristics have been considered during the instructional presentation.

There is an interconnectedness among the three determinants of time needed for learning. If the quality of instruction is less than optimal, some students may be disabled by poor instruction. The extent of this disability is influenced by the student's ability to understand instruction. Students with a high ability to understand will be able to overcome difficulties created by poor quality instruction. The amount of time needed to learn a task is a function of aptitude and quality of instruction; the amount of additional time needed is an inverse function of the student's ability to understand instruction.

Carroll's five elements illustrate that student learning is a function of both student and instructional (shaded in Figure 1-1) characteristics.

EXAMPLE

If a student needs two hours to learn
(aptitude, quality of instruction, ability to understand instruction),
and
the teacher allows one hour
(opportunity),
but
the student spends 30 minutes
(perseverance),
only
25% of optimal learning has occurred.

Carroll argues poignantly, "that it's **what happens during** the time allowed for learning that is important, also that student aptitudes for learning can possibly be improved through proper use of time" (Carroll, 1984, p. 12). Carroll's model illustrates that children may fail or succeed in school for different reasons. Carroll helped us to realize how important it is to understand a child's response to instruction by examining student characteristics in relation to task characteristics and in relation to the instructional strategy being used.

WALBERG'S META-ANALYTIC STUDY. In a quantitative synthesis of about 3,000 studies in which causal influences on students' affective, behavioral, and cognitive outcomes were analyzed, Walberg (1984) found three causal influences on student learning:

- Aptitude (ability, development, and motivation),
- Instruction (amount of student engagement and quality of the instructional experience), and
- Environment (home, peer, classroom climate, and television).

Many of these factors are influenced by more than teacher efforts. Ability and motivation, for example, are influenced by parents, by prior learning, and by students themselves (Walberg, 1984). While environment and aptitude exert a strong causal influence on learning outcomes, Walberg concluded that classroom learning is a:

> *. . . multiplicative, diminishing-returns function of four essential factors (student ability and motivation, and quality and quantity of instruction) and possibly four*

> *supplementary or supportive factors (the morale or social-psychological environment of the classroom, education-stimulating conditions in the home and in the peer group, and exposure to mass media, particularly television) . . . . Within this theoretical perspective . . . educators seek to modify the amount and quality of instruction to make it more suitable to the ability and motivation of each student to: (1) raise the average class achievement, (2) bring each student to at least a minimum, (3) diminish the variability of outcomes, or (4) optimize a combination of these three goals (1984, p. 7).*

Walberg helped us to realize the importance of home support for classroom learning and to define educators' roles as intentionally manipulating instruction to facilitate a better student outcome.

YSSELDYKE AND CHRISTENSON LITERATURE REVIEW. Our review of factors that influence instructional outcomes for students produced an extensive list (Ysseldyke & Christenson, 1987). The many kinds of student characteristics that professionals argue or have shown make a difference in instructional outcomes for individual students are listed in Table 1-1. For example, Bloom has argued that cognitive and affective entry behaviors influence instructional outcomes. Others have said that what students learn is a function of the cognitive, psychomotor, and psycholinguistic abilities they bring to the instructional task. Still others contend that instructional outcomes are to a certain extent a function of student temperament and self-concept. Those who focus on student characteristics contend that students are not blank slates on which learning is written, but that they bring to the learning setting a variety of individual differences and characteristics that influence the extent to which they profit from instructional efforts. Few argue that student characteristics are irrelevant. In fact, most place primary emphasis on student characteristics. Thus, psychologists and educators have spent far more time devising measures of student characteristics (note that there are tests for nearly all of the student characteristics listed in Table 1-1) than of environments or instructional factors.

In Table 1-2, examples of the kinds of environmental factors that influence instructional outcomes are listed. There are three categories of environmental factors:

- School district conditions,
- Within-school conditions, and
- General family characteristics.

There is considerable evidence to support the contention that there are a number of both school district factors and within-school factors that determine outcomes. And, there is considerable empirical evidence to support the contention that status characteristics, how students spend their time out of school, and the nature of the peer group with whom they associate influence instructional outcomes.These are illustrated in the table.

Table 1-1

Student Characteristics Said to be or Shown to be Related to Student Outcomes

- Cognitive and affective entry behaviors
- Abilities (cognitive, psychomotor, psycholinguistic, etc.)
- Prior learning or knowledge
- Level of skill development
- Ability to understand instruction
- Motivation
- Task persistence
- Learning rate
- Time needed to learn
- Attentional set
- Individual differences in locus of control, achievement, motivation, cognitive style, conceptual tempo, anxiety, attribution patterns, attitudes, etc.
- Learning styles
- Cognitive types
- Naturally occurring pupil characteristics (race, sex, physical appearance, etc.)

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Table 1-2

Environmental Factors Said or Shown to be Related to Student Outcomes

School District Conditions

- Mileage rate
- Teacher-pupil ratio
- Extent to which there is an emphasis on basic skills
- Amount of homework assigned
- Emphasis on test-taking (including minimum competency testing)
- Process by which the curriculum is developed
- Attendance

Within-School Conditions

- Class size
- School ambiance
- Extent to which the school climate is free from discipline problems
- Leadership from the principal
- Cooperative environment
- Collaborative staff relations
- Degree of structure
- Clarity of classroom rules and procedures
- Academic focus; high expectations

General Family Characteristics

- Status characteristics (Socioeconomic Status [SES], and the income level, educational level, and occupation of parents)
- Use of out-of-school time
- Peer group outside the school

In sum, we know that many factors influence academic outcomes for students. Students succeed or fail in schools because of the contribution of many factors, including student, teacher, classroom, instructional, school district, and home characteristics.

There are also instructional factors that influence student outcomes. These factors can be divided into four components of instruction:

- Planning instruction,
- Managing instruction,
- Delivering instruction, and
- Monitoring and evaluating instruction (see Table 1-3).

Table 1-3

Instructional Factors Said or Shown to be Related to Student Outcomes

Planning Instruction

- Sufficient time allocated to academic activities
- Quality of the teacher's diagnosis of student skill level
- Prescription of appropriate tasks that are clearly matched to student skill level
- Realistic, high expectations and academic standards
- Instructional decision-making practices (grouping, materials, ongoing diagnostic ability)
- Sufficient content coverage
- Instruction designed to include lesson presentation, practice, application, and review
- Kind of curriculum (spiral vs. sequential)

Managing Instruction

- Efficient classroom management procedures
- Well-established and efficient instructional organization and routines
- Productive use of instructional time
- Positive, supportive classroom interactions

Delivering Instruction

- The instructional sequence includes demonstration, prompting, and provision of opportunity for practice
- Expectations (goals, objectives, academic standards) are communicated clearly
- Lesson Presentation-Related Factors:
    - Extensive substantive teacher-pupil interaction, teacher questioning, signaling, re-explaining
    - Teacher-directed instruction (proceeding in small steps, carefully structuring learning experiences, etc.)
    - Clear demonstration procedures and systematic use of error correction procedures
    - High rate of accurate student response
    - Amount of guided practice prior to independent practice
    - Explicitness of task directions

(Continued on next page.)

Table 1-3 (continued)

Instructional Factors Said or Shown to be Related to Student Outcomes

- Practice-Related Factors:
  - Amount and kind of independent practice
  - Appropriateness of seatwork activities
  - Systematic application of principles of learning to instruction
  - High rates of academic engaged time (academic learning time; opportunity to learn)
  - Brisk, fast pacing (curriculum and lesson)
  - Degree of student accountability
  - Systematic, explicit feedback and corrective procedures

Monitoring and Evaluating Instruction

- Active monitoring of seatwork activities
- High success rates (on daily and unit tests)
- Frequent, direct measurement of pupil progress
- Progress through the curriculum dependent upon on mastery criteria
- Curriculum alignment (the relationship between what is to be taught [goals], what is taught [instruction], and what is tested [assessment])

Reason Two

Because Learning Does Not Occur in a Vacuum

The belief that diagnostic personnel should assess the learning environment as well as the learner is based on the assumption that student performance in school is a function of an interaction between the student and the instructional environment, and the recognition that the same individual responds differently in different situations. The argument that educators should spend as much time assessing the instructional environment as they spend assessing the learner was supported recently when a National Academy of Sciences Panel on Equity in Special Education concluded that, "valid assessment of the learning environment is as critical as valid assessment of the individual" (Heller, Holtzman, & Messick, 1982, p. xi). In addition, recent assessment-oriented textbooks, such as Sattler's (1988), contend that assessing the learner's instructional environment is an important component of a comprehensive assessment. He advocates that environmental assessment should be conducted prior to a child-based assessment battery to rule out causes for child difficulty and to document child difficulty under specific instructional approaches.

In making decisions about a student, the notion that we ought to assess or in some way account for the nature of the instructional environment is not new. Major textbooks on psychoeducational assessment include statements on the importance of assessing the instructional environment as well as, or in addition to, assessing the student. Consider the following examples:

EXAMPLES

"Behavior does not occur in a vacuum. The individual behaves in a particular environmental context, which in part determines the nature of his or her responses. The resulting behavior depends on the interaction of respondent and situational variables. The same individual will respond differently in different situations. Hence, the prediction of criterion performance from test scores or from earlier criterion behavior (such as school grades or performance on a previous job) can be materially improved by taking situational variables into account."

– (Anastasi, 1976, p. 578)

"In most cases, when a child is observed to be underachieving or acting out in an inappropriate manner, the major area of evaluative focus is only upon the child. Frequently, the identified student will be referred to a specialist within the school for intensive diagnostic efforts that are designed to isolate inherent disorders or deficits existing within the child that are 'responsible' for the learning or behavioral difficulty. Seldom does the educational evaluation attempt to probe those situational factors that may, in fact, have initiated or at least maintained the behavioral patterns that are of concern to the teacher."

– (Wallace & Larsen, 1978, p. 100)

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The theoretical bases for assessing the instructional environment comes from Bandura's concept of reciprocal determinism. Bandura (1978) showed how behavior is determined by a continuous reciprocal interaction among behavioral, cognitive, and environmental influences. Thus, student performance in the classroom is a function of student characteristics interacting with the nature of instructional tasks interacting with what teachers do instructionally. Extended to the mesosystem of home and school, it is critical to remember that the home influences and is influenced by what occurs in school; and that the school influences and is influenced by what occurs at home. The home-school relationship is another source of variation in children's learning.

In sum, students' learning problems are functionally related to the setting in which they occur (school, home, home-school relationship). This does not mean classrooms or homes cause learning problems; however, it suggests that learning problems are triggered or influenced by instructional factors in the classroom and school environment, the degree to which the home is supportive of student learning, and the degree to which the home-school relationship is collaborative. We know that student, teacher, classroom, instructional, school district, and home characteristics interact to influence academic outcomes. We know that we must assess learning or the problem situation, not merely the learner.

■ Reason Three

Because There are Limits to Assessing the Learner

The majority of assessment practices in schools continue to be focused primarily on the student—what is wrong, missing, or defective in the referred student. When students fail to learn at expected rates, educators often attribute such failure exclusively to within-student deficits, disabilities, dysfunctions, or disorders. Assessment of other contributing factors—teacher, instructional, classroom, or school district characteristics—is seldom done. There are limits to assessing only the learner. Some of the limits have been articulated by classroom teachers who make such comments as:

- "You didn't tell me anything I don't already know," or
- "This doesn't apply to my situation," or
- "You have given me nothing practical that I can use to help this child perform."

In particular, the limited information obtained from standardized tests for developing educational strategies has been noted. Other shortcomings of standardized tests are their limited relationship to actual classroom activities, the fact that testing observations of the student differ from the student's classroom performance and behavior, and that reasons for students receiving the same score on standardized tests are different (Howell, 1986).

We believe assessing a student's learning needs in context is critical to understanding the influence of instructional environment variables and helps interviewers learn the different reasons for low achievement. Assessing a student's instructional needs in context does not serve as a substitute for norm-referenced standardized testing. Both approaches are important, depending upon the question to be addressed.

■ Reason Four

So as to Put Content in Instructional Consultation

We define instructional consultation, as do many others (e.g., Curtis & Meyers, 1985), as collaborative problem solving between two or more individuals who are concerned about a student. *TIES-II* provides a framework to engage in intervention planning. It does not tell educators which exact instructional strategy to use, but instead provides a systematic way for educators to gather information on the critical instructional variables associated with higher achievement in schools. It is a system for fusing theory and practice.

Think of *TIES-II* as providing a system for gathering information about the process of instruction, which then can be used by individuals to select the best instructional strategy.

Therefore, while *TIES-II* data do not provide those involved in collaborative consultation about a student with a specific prescription, the information gathered provides essential content for designing and selecting an intervention.

What are the Assumptions Underlying Identification of a Student's Needs in Context?

First of all, instruction is a highly complex, dynamic process. It involves constant adjusting for student response or student error while providing for some degree of challenge. Although we describe 12 individual components of a student's classroom instructional environment, it is assumed that the components are interrelated. Thus, these core instructional components are applied in an integrative fashion in classrooms. Similarly, we describe five home support for learning components. These components are also interrelated.

EXAMPLE

Parents undoubtedly set high academic expectations for their child by:

- **Explicitly stating their standards** (*TIES-II* Component 13: Expectations and Attributions),
- **Encouraging learning in the home** (*TIES-II* Component 16: Parent Participation), and
- **Checking for quality homework completion** (*TIES-II* Component 17: Structure for Learning).

Second, it is not only the frequency of occurrence but also the appropriateness of the instructional components that is important in intervention planning. Appropriateness should be decided by those involved in the intervention planning; thus collaborative consultation is integral to the success of identifying and planning for students' instructional needs.

Third, there is no set of instructional interventions that will be universally effective. The efficacy of interventions depends on the context and must be monitored closely by those involved in intervention selection.

Fourth, it is assumed that complex diagnostic procedures are not necessary to make a relevant instructional change. We use the concept of "least restrictive assessment" by gathering information in classrooms (where the problem concern typically arises) and on variables (skill level, participation, success rate, task completion rate) that educators can **change**. This assumes that educators can take into account and control certain environmental variables.

Fifth, learning problems are conceptualized as a "triangle," not as the student's problem. Student characteristics, task characteristics, and instructional strategy interact to affect instructional outcomes. This triangle is relevant irrespective of setting (home or school). A good way to describe a student's instructional needs is to conceptualize this triangle, or ask yourself, "What are the student's characteristics in relation to the assigned task in relation to the instructional strategy used by teachers or parents?" This assumes that the focus of assessment is on relationships and interactions.

Finally, users of *TIES-II* should operate from an ecological view of assessment. Traditional and ecological perspectives of assessment are contrasted by five variables, as illustrated in Table 1-4.

- First, the traditional perspective focuses assessment on student characteristics, and determines weaknesses within the individual (e.g., John has an organizational disability). In contrast, the ecological perspective is primarily interested in understanding relationships and would try to answer a question such as, "Under what conditions is John organized or disorganized?"
- Second, the traditional perspective focuses on understanding the cause of the problem in order to prescribe a specific treatment. Multiple "causes" or many contributing factors are evident when one operates from an ecological perspective.

Table 1-4

Traditional vs. Ecological Assessment

Traditional	Ecological
Focus of assessment is on student characteristics	Focus of assessment is on interrelationships between students and instructional environments
Focus is on understanding the causes of problems in order to prescribe treatments	Focus is on microsystem, mesosystem, exosystem, and macrosystem influences
Emphasis is on problem description	Emphasis is on problem solving
"Why" questions dominate	"What" and "how" questions dominate
Interventions are student-focused	Interventions are targeted at students, teachers, parents, peers, and instruction

- Third, the emphasis of assessment is problem description or diagnosis in the traditional assessment approach, whereas problem solving is emphasized in an ecological perspective. Assessing for intervention, brainstorming, and focusing on how individuals can change the environmental context to elicit an appropriate student response dominate assessment from an ecological perspective.
- Fourth, the questions asked in an ecological approach begin with "what" (e.g., "What needs to be taught?") or "how" (e.g., "How do we teach?"), whereas "why" questions (e.g., "Why isn't the child learning?") dominate a traditional approach. "Why" questions often invite blame, and consequently are avoided in an ecological approach.
- Fifth, interventions are student-focused in the traditional perspective, whereas multiple targets of intervention are considered in an ecological approach. In an ecological approach, the student, teacher(s), parent(s), peers, or instruction may be the target of intervention; in addition, all these resources can be used as agents of change to elicit a more competent student response.

What are the Purposes for Using *TIES-II*?

The primary purpose for which to use *TIES-II* is to design an instructional intervention to address teachers' concerns about an individual student. Although *TIES-II* may be useful to child study teams making eligibility decisions, the system is most helpful to intervention assistance teams (e.g., prereferral intervention teams, teacher assistance teams) or individuals engaged in instructional consultation.

Intervention planning in schools generally occurs between two individuals (e.g., a classroom teacher and school psychologist) and with a team of educators (e.g., intervention assistance teams, teacher assistance teams, school-wide assistance teams, and prereferral intervention teams, etc.). *TIES-II* fills a void in the assessment field by providing educators with a structure and systematic procedures for gathering relevant information for intervention planning.

TIES-II is meant to be used **flexibly**. Therefore, users of *TIES-II* need to decide what information will be gathered, who will gather the information, and where the information should be gathered. The guiding principle for making these decisions is the teacher's referral concern. The primary purpose of *TIES-II* is to develop an intervention to address the teacher's concern—when a teacher is first concerned about a student. Because of the assessment-intervention link, *TIES-II* may be a helpful system in other school practices, such as IEP development or consultation. In addition, individuals have found the *TIES-II* components to be an excellent way to introduce the instructional effectiveness and home support for learning literatures to preservice teachers.

How are a Student's Instructional Needs Determined?

TIES-II is comprised of 17 components that are correlates of academic achievement. These components indicate what educators should look for when planning an intervention for a student. *TIES-II* users look for the degree to which 12 instructional environment components are present and important for the target student:

THE 12 INSTRUCTIONAL ENVIRONMENT COMPONENTS

1. Instructional Match
2. Teacher Expectations
3. Classroom Environment
4. Instructional Presentation
5. Cognitive Emphasis
6. Motivational Strategies
7. Relevant Practice
8. Informed Feedback
9. Academic Engaged Time
10. Adaptive Instruction
11. Progress Evaluation
12. Student Understanding

These 12 components are used to determine areas in which a change may be needed to enhance the target student's learning in the classroom.

Users of *TIES-II* also look for the degree to which five home support for learning components are present for the target student.

THE FIVE HOME SUPPORT FOR LEARNING COMPONENTS

1. Expectations and Attributions
2. Discipline Orientation
3. Home Affective Environment
4. Parent Participation
5. Structure for Learning

These five components are used to determine areas in which a change may be needed to enhance the target student's support for learning from the home.

The 17 components provide a structure to answer the question, "What can be done by educators and parents to improve the target student's school performance?"

How is *TIES-II* Organized?

To identify a student's instructional needs in context, we believe observation and interviewing of teachers, parents, and the target student are necessary. Therefore, assessment of learning or the student's instructional environment is multimethod and multisource in *TIES-II*. Consequently, there are several forms included with this system, which may create a perception that the system is **very** complex. We admit that analysis of learning is more complex than analysis of the learner. And the fact that observation and interviews can occur in different content areas adds to the complexity. However, the system should not be perceived as complex simply because we use multimethods and multisources—all of which result in additional forms to organize the information.

We have tried to clarify the *TIES-II* system by drawing a distinction between **data-gathering tools** and **intervention planning forms**:

- Data-gathering tools include the Observation Record, the Teacher Interview Record, and the Student Interview Record for understanding the student's instructional needs within the classroom context, and the Parent Interview Record for understanding the student's support for instructional needs within the home context. The Instructional Needs Checklist is considered a data-gathering tool, but is an optional, supplemental form.

- Intervention planning forms include the Instructional Environment Form, the Home Support for Learning Form, and the Intervention Planning Form. The interrelationships and functioning of the eight system forms are displayed in Figure 1-2.

Four reproducible forms are included in this manual (and forms sets of four nonreproducible forms, for distribution by education professionals, are packaged separately). In Appendix A you will find the:

- Observation Record,
- Student Interview Record,
- Teacher Interview Record, and the
- Intervention Planning Form.

These reproducible forms are prototypes or examples of what you may want to use as you gather observational and interview data and as you plan an intervention. You may want to rephrase questions to obtain the relevant information from teachers and students. You may also want to adapt the Intervention Planning Form to best meet your needs and the needs of other educators in your school.

Appendix B contains discriptors of *TIES-II* components, helpful for identifying targets for instructional intervention. Supplemental teacher interview questions are provided in Appendix C, and supplemental student interview questions are provided in Appendix D.

The four forms packaged separately are the:

- Parent Interview Record,
- Instructional Environment Form,
- Home Support for Learning Form, and
- Instructional Needs Checklist.

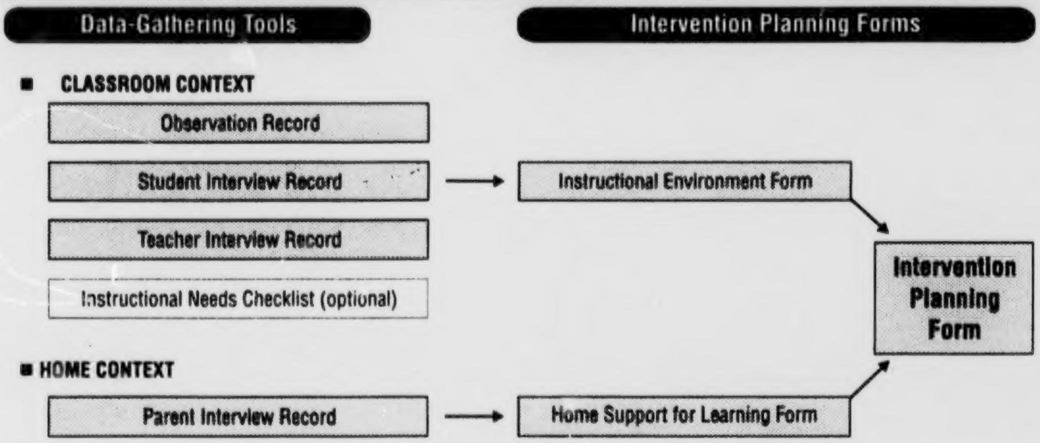
As *TIES-II* is a flexible system to gather information needed by those who are involved in planning an intervention to address the referring teacher's concern, users of *TIES-II* (whether an individual or a team) need to observe and interview to understand the multiple influences on the student's performance. The recommended sequence for this process is:

- Classroom observation,
- Student interview (which includes analysis of the student's work), and
- Teacher interview.

Upon completion of the observation and interviews, the *TIES-II* user completes the Instructional Environment Form. The referring teacher may also be asked to complete the Instructional Environment Form prior to the collaborative intervention planning meeting.

Figure 1-2

TIES-II **Data-Gathering Tools and Intervention Planning Forms**


Data-Gathering Tools
Intervention Planning Forms
CLASSROOM CONTEXT
Observation Record
Student Interview Record
Teacher Interview Record
Instructional Needs Checklist (optional)
Instructional Environment Form
Intervention Planning Form
HOME CONTEXT
Parent Interview Record
Home Support for Learning Form

The parent interview can be completed at any point in time. Upon completion of the interview, the *TIES-II* user completes the Home Support for Learning Form. The Instructional Environment Form and Home Support for Learning Form are then used to plan an intervention and maintain a record of interventions. The Intervention Planning Form illustrates the collaborative problem-solving structure we recommend be used in planning.

■ Flexibility is a Defining Characteristic of *TIES-II*

We have developed a comprehensive methodology for identifying a student's instructional needs in context and for using this information to plan an intervention to address a teacher's concern. Teachers' referral concerns vary on a dimension from elementary to very complex. Thus, data-gathering must be flexible. The same procedures should not be used for all teacher concerns about students. Therefore, not all the *TIES-II* forms are needed to address each teacher's concern. The collaborative team must decide which parts of this system are essential for each referral. For example, it may be that only the classroom context needs to be addressed. It may be that a consultant will be most effective by using only the supplemental form, the Instructional Needs Checklist. Parent interviews may or may not be included. In keeping with the ecological perspective, however, the most complete understanding of the student's needs will be obtained by completing both the Instructional Environment Form and the Home Support for Learning Form. Specific procedures are described in Chapter 2, Methodology.

What Not to Do With *TIES-II*

Do not evaluate teachers. Problem solving, not blaming, is the major underpinning of the *TIES-II* system. Teachers refer students because they are concerned about the students. They want a change for the students, other students, and themselves. They want a change in the students' instructional environment.

TIES-II is sometimes confused with teacher evaluation scales, which are based on reviews of the same educational literature. Both are based on factors that predict positive academic outcomes for students. However, *TIES-II* differs from teacher evaluation scales in three very important ways: (1) its purpose, (2) the way it is implemented, and (3) its focus of measurement. The purpose of *TIES-II* is description, not evaluation. *TIES-II* is used to identify and describe the student's instructional needs, not to evaluate the effectiveness of the teacher. *TIES-II* ratings are used to organize an individual's perceptions about the presence and importance of variables for a student. Ratings are not evaluative, such as "poor," "fair," "good," or "excellent." The purpose of *TIES-II* is to describe an individual student's learning environment in terms of 12 instructional components. There is no assumption that if the student's instructional environment is very much like all the 12 components that it is superior to one in which the student's instructional environment is very much like only 10 components. It may be that the two other components are not "critical" for the student's achievement. Only after effective consultation between the examiner and teacher can this judgment be made.

TIES-II is used most effectively within a consultative model, while teacher evaluation scales are most often a one- (or two-) time evaluation characteristic of supervision. The consultative model is essential to achieve the major purpose of *TIES-II*, which is to design instructional interventions that are good for the teacher and the student. A teacher refers a student because of a concern; effective consultation leads to addressing the teacher's concern and selecting an intervention that has a positive influence on the student's learning. *TIES-II* enables the teacher and examiner to monitor the effectiveness of the selected intervention.

The focus of *TIES-II* measurement is on the instructional environment, while the focus of teacher evaluation scales is on the behavior of the teacher. The instructional environment is illustrated by a triangle, that is, the continual interaction and mutual influence of student characteristics with the teacher's instructional/management strategies with the assigned task.

The "triangle" is a student-teacher-task interaction.

EXAMPLE

In rating Academic Engaged Time the examiner must consider teacher, student, and task influences. Consider this situation:

- The examiner determines that the task is at an appropriate instructional level and relevant to the student's instructional goal,
- The teacher uses many strategies to redirect the student when unengaged, and
- The student's engagement rate is still very low.

When the student is observed in a smaller class, one with only 11 students, the student's engagement rate is four times higher.

This situation illustrates the effect of a classroom variable (i.e., class size) on student performance. This classroom variable is clearly out of the direct control of the teacher.

TIES-II is used with an individual student, while teacher evaluation scales focus on how the teacher is handling and managing the **entire** class. *TIES-II* is used to identify the student's instructional needs in the classroom so that changes can be made in the task or instructional management strategy used.

One further consideration is important. *TIES-II* is used to gather data in 12 domains. Those who evaluate teachers gather data in many more domains. In evaluating teacher performance, many variables in addition to those addressed in *TIES-II* need to be considered.

Similarly, do not evaluate parents. As explained in Chapter 5, Correlates of Academic Achievement, perspective taking between parents and educators is necessary to plan an intervention collaboratively. Because of multiple demands in their lives, some parents may not be able to actively support their children's learning at home. A nonjudgmental, problem-solving approach characterizes *TIES-II.*

2

METHODOLOGY

In this section you will learn about using *TIES-II*. Specifically, you will learn: (1) who uses *TIES-II*; (2) the parts of the system, including data-gathering tools and forms, the *TIES-II* components, and methods used to gather data; and (3) prerequisites for using *TIES-II* effectively.

TIES-II is a system used by a collaborative team (e.g., teacher- psychologist, student support team) to gather observational and interview data from teachers, parents, and students for the purpose of designing interventions to address specific referral concerns.

The system consists of 12 instructional environment components and five home support for learning components. Information on the instructional environment components can be gathered by observation, teacher interview, student interview, and teacher description of the student's instructional experience. Information on the home support for learning component is obtained from the parents, preferably through interviewing, although survey completion of the form can also be used. Educators decide what information they need to plan an intervention, and which data-gathering tools will be used. All parts of the system are not always needed to address a teacher's referral concern.

Who Uses *TIES-II*?

TIES-II is used by educators or psychologists to plan an intervention that addresses a teacher's concern about an individual student's classroom performance. It provides a structure to gather relevant information to use in intervention planning. *TIES-II* can be used by two people (e.g., referring teacher and school psychologist, referring teacher and educational consultant) or a team of educators (e.g., instructional support teams, student/staff support teams, intervention assistance teams, teacher assistance teams).

TIES-II is most helpful for intervention planning when the referral concern or problem is specific. Consultation is a voluntary activity; therefore, the use of *TIES-II* is most effective and efficient when the teacher asks for the input and involvement of others.

We believe the best way to understand the teacher's concern is based on the work of Kratochwill and Bergan (1990). The referring teacher needs to describe in specific, observable language the student's actual level of performance (i.e., problematic behavior) as well as the desired level of performance (i.e., acceptable behavior) for the student. Presumably, when the discrepancy between actual and desired levels of performance is closed, the student would no longer be referred for this problem. Thus, intervention planning is directed toward addressing classroom teachers' concerns, and data collection is focused on gathering information that would be helpful in closing the discrepancy between actual and desired performance levels.

What are the Parts of the System?

Data-gathering tools and intervention planning forms, *TIES-II* components (12 instructional environment and five home support for learning components), and methods used to gather data are described in this section.

Data-gathering Tools and Intervention Planning Forms

The methods used to gather information about the student's instructional needs in context are primarily observation and interviewing. Because a broad picture is sought, input is gathered from three key stakeholders in a child's life: teachers, parents, and the student. The *TIES-II* data-gathering forms provide a structure or systematic way to gather observational and interview data to identify a student's instructional needs at school and at home. Additional methods (e.g., curriculum-based assessment) can be incorporated in the *TIES-II* system.

TIES-II includes eight separate parts:

- Five parts are considered data-gathering tools, and
- Three parts are considered intervention planning forms (refer back to Figure 1-2).

Data-gathering tools provide a structure for you to observe and interview about the student's instructional needs in the context of the classroom and home, and consist of the Observation Record, Student Interview Record, Teacher Interview Record, Instructional Needs Checklist (optional), and Parent Interview Record. Intervention planning forms include the Instructional Environment Form, Home Support for Learning Form, and the Intervention Planning Form. You decide which of the forms and tools to use.

Information gathered is used to make judgments about the 12 classroom instructional environment components on the Instructional Environment Form and the five home components on the Home Support for Learning Form. These two intervention planning forms provide a structure for you to plan an intervention. These data are considered by you and your colleagues to design an intervention while using a collaborative problem-solving process. The process is outlined on the Intervention Planning Form, which is described further in Chapter 3, Putting the Pieces Together.

Not all *TIES-II* tools and forms are required to address a teacher's referral concern. Teachers' concerns about student performance are varied; therefore, you must decide which *TIES-II* tools and forms will assist you in gathering the needed information in the most expedient fashion:

- You must decide whether parents need to be involved in the planning process.
- You must decide whether an observer should conduct a classroom observation and interview the student and teacher.
- In some cases, interventions could be planned from information gathered on the Instructional Needs Checklist.

Each part of *TIES-II* is described below. Also, directions for using the forms are printed on each form.

Data-Gathering Tools

Four tools can be used to gather data about a student's instructional needs in the classroom context: the (1) Observation Record, (2) Student Interview Record, (3) Teacher Interview Record, and (4) the Instructional Needs Checklist.

- The **Observation Record** is an anecdotal recording form that the observer uses while observing a classroom lesson. During the observation, the observer thinks about the student's instructional needs for four aspects of instruction:
  - Planning,
  - Management,

  - Delivery, and
  - Monitoring/evaluation.

  The focus of the observation is on student behavior in relation to task demands in relation to the instructional/management strategy being used. The observer records not only what the student is doing, but also how the student is influenced by task characteristics and the instructional/management strategy being used. The observer should record ideas for intervention and/or questions that should be addressed by the collaborative team. The Observation Record appears in Appendix A.

- The **Student Interview Record** is semi-structured and conducted with the instructional materials used with the student during the classroom observation. It is best to interview the student immediately following the observation. You are encouraged to select questions of interest, ask additional questions, and reword items. The purpose of the student interview is to understand the student's instructional experience. Students are asked questions about the assigned work during the classroom observation, as well as work assigned in the last month. Questioning areas include:
  - Student understanding of assignments and teacher expectations,
  - Student self-efficacy,
  - Student accountability for learning, and
  - Student cognitions about classroom instruction.

  Additional student questions are provided in Appendix D. The Student Interview Record appears in Appendix A.

- The **Teacher Interview Record** is conducted because observational data do not necessarily yield accurate information about these areas:
  - Instructional goal,
  - Teacher expectations,
  - Instructional planning and placement,
  - Independent seatwork assignments,
  - Overall success rate, and
  - Evaluation of student progress.

  Information in these areas is considered essential to ask teachers to identify a student's instructional needs. Teacher interview questions appear in Appendix C, and descriptors to address the *TIES-II* components are provided in Appendix B. You should ask additional questions if they will assist you in intervention planning and change the wording of questions if necessary to create a conversational tone.

  When conducting the teacher interview, it is very important for the interviewer to introduce the interview with this statement: "I have some questions I want to ask so that I can understand what it is like to teach ____________" (the target student).

  This statement helps reduce teacher defensiveness about the instruction-focused questions. Recognize that while interviews are routine for teachers, interviews about instruction for a student are not. Teachers are much more accustomed to answering questions about a student's strengths and weaknesses than about instruction for the student. Thus, they have different expectations for the teacher interview, and this single statement provides a nice advance organizer and clarifies the purpose of the questions.

- The **Instructional Needs Checklist (optional)** allows the consultant to gather information from the teacher about the student's strengths and weaknesses, instructional needs, and response to different tasks and materials. Teachers have a wealth of information about a student's performance and it is our hope that the checklist format allows for a concise way to summarize this information. Also, this checklist may help users of *TIES-II* to clarify the teacher's referral concern. Users of *TIES-II* can gather information from several teachers with the checklist. It provides a concise summary of teachers' perceptions of a student's instructional needs. It is supplemental: It is not necessary to use this form to rate the Instructional Environment Form. The Instructional Needs Checklist is a separate protocol.

One tool is used to gather information about a student's needs for home support for learning: the Parent Interview Record. Parent is used broadly, and refers to the primary caregiver for the student or the individual who is most aware of the student's school performance.

- The **Parent Interview Record** provides a structure for gathering information about five components of the home environment that are associated positively with student achievement:
  1. Expectations and attributions,
  2. Discipline,
  3. Parent-child interactions,
  4. Parent participation in schooling, and
  5. Structure for learning.

  Parents' responses to the items under specific observation are used to determine the presence of these five components. The parents are asked to give their general observations about school-related behaviors and ways they could help educators address the teacher's concern about their child. In addition, they indicate ways the student's learning is typically supported at home. Parents are asked to respond in a global fashion to help reduce defensiveness or parent guilt. The tone of the interview needs to be conversational. Interviewers are encouraged to ask additional questions and to listen to the parents' needs carefully.

  Because one of the purposes of interviewing parents is to build a cooperative connection between home and school to benefit student learning, a face-to-face interview is preferred. We encourage you to conduct a face-to-face interview with parents. However, we recognize that other means of data collection are often necessary because of time constraints and multiple demands in individuals' lives. Therefore, phone interviews and parent completion of the form as a survey could also be used. The Parent Interview Record is a separate protocol. It is a data-gathering tool.

Intervention Planning Forms

Three forms are used to plan an intervention to address the teacher's concern: the (1) Instructional Environment Form, (2) Home Support for Learning Form, and (3) the Intervention Planning Form. These forms are considered the "meat" of *TIES-II*.

- The **Instructional Environment Form** contains statements about 12 components of classroom instructional environments that are positively associated with student achievement. Both the observer/interviewer and referring teacher may complete this form. To do so they describe:
  1. The extent to which the component is clearly present in the student's instructional environment, and
  2. The extent to which the component is necessary and important to enhance instructional outcomes for the student.

  The Instructional Environment Form is a separate protocol and is used in intervention planning.
- The **Home Support for Learning Form** contains statements about five components of the home environment that are positively associated with student achievement. The form is completed by the individual who conducts the parent interview (e.g., school psychologist, social worker, consulting teacher). The interviewer describes the extent to which the five components are present in the student's home environment. Parents' responses to items under specific observation and used to make a judgment about the presence of the five home support for learning components.

In addition, the interviewer summarizes ways parents are comfortable helping their child at home and other concerns expressed by the parent. The Home Support for Learning Form is a separate protocol and is used in intervention planning.

- The **Intervention Planning Form** is an outline of the collaborative planning process to be followed by the collaborative team, which can take many forms (e.g., referring teacher and a school psychologist or intervention assistance team). Instruction is planned by following these steps:
  1. Describe the teacher referral concern,
  2. Share information,
  3. Arrive at consensus about needs,
  4. Describe home support for learning,
  5. Identify ways to involve parents,
  6. Brainstorm options,
  7. Select an intervention,
  8. Share resources, and
  9. Address teacher/parent questions.

  Interventions are documented on this form also. This form appears in Appendix A.

■ *TIES-II* Components as Predictors of Achievement

In this section the 12 instructional environment components and five home support for learning components are defined. Descriptors, which are helpful in learning the components, are detailed lists of factors that comprise each of the 12 instructional and five home support for learning components. Descriptors are used for two purposes: (1) to learn the content of the components, and (2) to identify potential targets for instructional intervention. Detailed descriptors are listed in Appendix B of this manual, and brief summaries of the 17 *TIES-II* components follow.

Instructional Planning Components

■ *TIES-II* Component 1

Instructional Match

Achieving the appropriate match between student characteristics and instruction delivered is undisputed as a component of effective instruction. Bloom's mastery learning model (1985) underscores the importance of considering cognitive and affective entry behaviors when planning instruction. Good and Brophy (1984) clearly articulate that a primary task of the teacher must be to achieve an appropriate match—both on initial tasks and on modifications throughout the instructional unit. Peterson, Carpenter, and Fennema (1989) showed that teachers who knew what their students did and didn't know were more effective. Instructional planning is a major step in several teaching models (e.g., Squires et al., 1984).

Student, task, and classroom characteristics must be considered to achieve an appropriate match. In addition to analyzing student characteristics, task variables need to be examined through such procedures as task analysis (Brophy & Alleman, 1991). Classroom characteristics, such as physical space, peer interactions, and instructional groups, affect a teacher's planning (Squires et al., 1983).

In the Beginning Teacher Evaluation Study (see Marliave & Filby, 1985), student success rate was significantly related to reading and math achievement gains. Teachers who had achieved the best match for a student engaged in diagnosis and prescription. They were able successfully to predict a student's success on assigned tasks.

RECOMMENDED READINGS
Bennett, N., Desforges, C., Cockburn, A., & Wilkinson, B. (1984). *The quality of pupil learning experiences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
Brophy, J. & Alleman, J. (1991). Activities as instructional tools: A framework for analysis and evaluation. *Educational Researcher, 20*(4), 9-23.
Good, T.L. & Brophy, J.E. (1984). *Looking in classrooms*. New York: Harper and Row.
Marliave, R. & Filby, N.N. (1985). Success rate: A measure of task appropriateness. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 217-235). New York: Longman.
Peterson, P.L., Carpenter, T., & Fennema, E. (1989). Teachers' knowledge of students' knowledge in mathematics problem solving: Correlational and case analyses. *Journal of Educational Psychology, 81*, 558-569.
Squires, D.A., Huitt, W.G., & Segars, J.K. (1983). *Effective schools and classrooms: A research-based perspective*. Alexandria, VA: Association for Supervision and Curriculum Development.

■ *TIES* Component 2

Teacher Expectations

The critical role of teacher expectations on student achievement has been addressed in both the school and instructional effectiveness literatures. As part of the effective schools movement, establishment of high academic expectations and student accountability for meeting these expectations was one of the five key ingredients identified by Edmonds (1979) for increasing achievement in low-achieving, inner-city schools. Good and Brophy (1984) have written extensively about setting high, yet realistic, expectations for all students. Their research indicates that teachers' behavior affects expectations.

EXAMPLE
Teachers call on low-achieving students less often, a behavior that establishes lower expectations for student performance.

Kagan (1992) provided a comprehensive review of the literature on teacher beliefs and their relationship to teaching. Teacher expectations must also be communicated clearly to the student. If unstated by the teacher, the student's understanding of the teacher's goal or intent may be mistaken (Anderson, 1985a; Winne & Marx, 1982). Teacher expectations for what the student is to learn, in addition to what the student is to do, need to be stated explicitly to promote positive learning outcomes for students. Standards for acceptable performance in terms of quantity and quality need to be stated. The instructional psychology literature (e.g., Gagne, 1977; Gagne & Dick, 1983) underscores the importance of teacher expectations. Clear communication of high, realistic expectations is an integral part of learning.

RECOMMENDED READINGS
Anderson, L.W. (1985a). What are students doing when they do all that seatwork? In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 189-202). New York: Longman.
Good, T.L. & Brophy, J.E. (1984). *Looking in classrooms*. New York: Harper and Row.
Kagan, D.M. (1992). Implications of research on teacher belief. *Educational Psychologist, 27*(1), 65-90.
Weinstein, R.S. (1983). Student perceptions of schooling. *The Elementary School Journal, 83*, 287- 312.
Wong, B.Y.L., Wong, R., & LeMare, L. (1982). The effects of knowledge of criterion task on comprehension and recall in normally achieving and learning disabled children. *Journal of Educational Research, 76*, 119-126.

Instructional Management Component

■ *TIES-II* Component 3

Classroom Environment

School, teacher, and instructional effectiveness literatures address the importance of classroom management for achieving an academic focus in the classroom. Classroom management, both for behavioral rules and organizational routines, has been identified as a key to increasing students' engagement rates (Good, 1983; Karweit, 1983).

The purpose of effective classroom management is to maintain order (Doyle, 1986), thereby increasing productive use of classroom time. Classrooms need to be organized to reduce time wasters. Effectively managed classrooms are characterized by:

- Essential behavioral rules and expectations that are established early in the school year; infractions that are handled promptly, often followed by reteaching.
- Teaching students critical instructional routines (e.g., how to find materials, seek assistance, what to do if finished early) to reduce unnecessary interruptions during teaching and to keep transitions between scheduled activities brief.
- A cooperative, pleasant atmosphere in which students are accepted and assisted in completing academic work successfully.

The positive effect of these characteristics on student achievement has been empirically documented in both regular (Anderson et al., 1979; Fraser, 1980) and special education (Englert & Thomas, 1982) settings.

RECOMMENDED READINGS

Anderson, L.M., Evertson, C.M., & Brophy, J.E. (1979). An experimental study of effective teaching in first-grade reading groups. *The Elementary School Journal, 79,* 193 222.

(Continued in next column.)

RECOMMENDED READINGS (continued)

Brophy, J.E. (1983). Classroom organization and management. *The Elementary School Journal, 83,* 265- 285.

Doyle, W. (1986). Classroom organization and management. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 392-431). New York: Macmillan.

Emmer, E.T., Evertson, C.M., & Anderson, L.M. (1980). Effective classroom management. *Elementary School Journal, 80,* 219-231.

Englert, C.S. (1984). Measuring teacher effectiveness from the teacher's point of view. *Focus on Exceptional Children, 17*(2), 1-14.

Fraser, B.J. (1980). Research on classroom learning environments in the 1970's and 1980's. In B.J. Fraser (Ed.), *Studies in educational evaluation* (Vol. 6). Oxford: Pergamon.

McCaslin, M. & Good, T. (1992). Compliant cognition: The misalliance of management and instructional goals in current school reform. *Educational Researcher, 21*(3), 4-17.

Wheldall, K. & Olds, D. (1987). Of sex and seating: The effects of mixed and same-sex seating arrangements in junior high classrooms. *New Zealand Journal of Educational Studies, 22*(1), 71-85.

Instructional Delivery Components

■ *TIES-II* Component 4

Instructional Presentation

There is consensus that the nature of instructional presentation highly affects student achievement. Instructional presentation is discussed as one factor influencing the quality of instruction (Carroll, 1963; Good, 1983), and it is believed that lesson development is the single most important aspect of instruction (Good & Grouws, 1979). It is the essence of teaching. An effective instructional presentation is characterized by:

- A specific sequence of events (e.g., overview, explanation, demonstration, guided practice, feedback), often referred to as the demonstrate-prompt-practice-prove sequence.
- Use of several concrete examples, teacher modeling, and a carefully sequenced presentation.
- Use of cues and prompts to increase a student's opportunity to respond accurately.
- Clear communication of the instructional goal, which provides a plan for instruction (Anderson, 1985b), direction to the student (Good & Brophy, 1984), and the basis for evaluation and mastery (Bloom, 1976).
- A high degree of teacher-student interaction, resulting in active student participation, a brisk instructional pace, and immediate corrective feedback.
- Clarity of task directions and frequent monitoring of the student's understanding and answers.

These characteristics have been incorporated into several model teaching programs (Active Teaching Model, ECRI) and have been referred to as the essential teaching functions by Rosenshine (1983). Reading and math achievement gains have been empirically documented for elementary students when such instructional procedures are used consistently.

RECOMMENDED READINGS

Anderson, L.M., Evertson, C.M., & Brophy, J.E. (1979). An experimental study of effective teaching in first-grade reading groups. *The Elementary School Journal, 79*, 193-222.

Englert, C.S. (1984). Effective direct instruction practices in special education settings. *Remedial and Special Education, 5*, 38-47.

Goldenberg, C. (1993). Instructional conversations: Promoting comprehension through discussion. *The Reading Teacher, 46*(4), 316-326.

(Continued in next column.)

RECOMMENDED READINGS (continued)

Good, T.L. (1983). Classroom research: A decade of progress. *Educational Psychologist, 18*(3), 127-144.

Good, T.L. & Grouws, D.A. (1979). The Missouri mathematics effectiveness project. *Journal of Educational Psychology, 71*, 355-362.

Hunter, M. & Russell, D. (1981). Planning for effective instruction: Lesson design. In *Increasing your teaching effectiveness* (pp. 23-41). Palo Alto, CA: The Learning Institute.

Rosenshine, B. & Stevens, R. (1986). Teaching functions. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 376-391). New York: Macmillan.

TIES-II Component 5

Cognitive Emphasis

Students who understand how to solve problems and how to approach tasks achieve more in school. Winne (1985) refers to the process of knowing how to think to solve problems as cognitive achievements. Students with disabilities often do not know which strategies to employ in solving problems. To compensate for this problem, direct teaching of learning strategies has been suggested (Weinstein & Mayer, 1986).

Research in the area of reading also contains numerous references to the importance of emphasizing the cognitive aspects of instruction (Goldenberg, 1993). Explicit instruction, stressing the what, when, how, and why of reading comprehension instruction, has produced increased reading gains for students (Pearson & Dole, 1985). Duffy, Roehler, & Rackliffe (1985) underscore the importance of the teacher modeling "how to think" when instructing students in the area of reading comprehension. Students of teachers who stressed the reasoning skills used rather than the labels and definitions (e.g., context clues are . . .) made greater gains in reading.

Although a relatively new research area, the study of student cognitions has led to the idea that a student's thinking processes mediate between teacher input and student achievement. Consequently, it is recommended that teachers ask students to explain their answers and the processes used to solve problems.

RECOMMENDED READINGS

Chan, C., Burtis, P.J., Scardamalia, M., & Bereiter, C. (1992). Constructive activity in learning from text. *American Educational Research Journal, 29*, 97-118.

Duffy, G.G., Roehler, L.R., & Rackliffe, G. (1985, April). *Qualitative differences in teachers' instructional talk as they influence student awareness of lesson content.* Paper presented at the American Educational Research Association, Chicago.

Goldenberg, C. (1993). Instructional conversations: Promoting comprehension through discussion. *The Reading Teacher*, 316-326.

Pearson, P.D. & Dole, F.A. (1985). *Explicit comprehension instruction: The model, the research, and the concerns.* Paper presented at the American Educational Research Association, Chicago.

Strong, R.W., Silver, H.F., & Hanson, R. (1985). Integrating teaching strategies and thinking styles with the elements of effective instruction. *Educational Leadership, 42*, 9-15.

Weinstein, C.E. & Mayer, R.E. (1986). The teaching of learning strategies. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 315-327). New York: Macmillan.

Winne, P.H. (1985). Steps toward promoting cognitive achievements. *The Elementary School Journal, 85*(5), 673-693.

Winne, P.H. & Marx, R.W. (1982). Students' and teachers' views of thinking processes for classroom learning. *Elementary School Journal, 82*, 493-518.

■ *TIES-II* Component 6

Motivational Strategies

The importance of motivation for learning is undisputed in the educational and psychological literatures. Instructional psychology includes the use of motivational strategies as a principle of learning, and in the instructional and teacher effectiveness literatures a relationship between achievement and motivation is consistently demonstrated (e.g., Brophy, 1983; Newby, 1991).

Optimizing student motivation through the kind of instructional lesson or extra strategies is a characteristic of effective instruction. While the use of extrinsic methods (e.g., contingency contracts, rewards) has been emphasized, the use of intrinsic approaches has recently received primary attention. Several individuals favor stressing the rationale for the lesson and assigned tasks (Brophy, 1983) or emphasizing personal effort (Dweck, Davidson, Nelson, & Enna, 1978).

RECOMMENDED READINGS

Brophy, J.E. (1983). Conceptualizing student motivation. *Educational Psychologist, 18*, 200-215.

Dweck, C.S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology, 31*, 674-685.

Dweck, C.S., Davidson, W., Nelson, S., & Enna, B. (1978). Sex differences in learned helplessness: II. The contingencies of evaluation feedback in the classroom and III. An experimental analysis. *Developmental Psychology, 14*, 268-276.

Newby, T. (1991). Classroom motivation: strategies of first-year teachers. *Educational Psychology, 83*, 195-200.

Wittrock, M.C. (1986). Student thought processes. In M.C. Wittrock (Ed.), *Handbook for research on teaching* (3rd ed., pp. 297-314). New York: Macmillan.

■ *TIES-II* Component 7

Relevant Practice

Ample amounts of two kinds of practice—controlled (guided) or independent (seatwork)—need to be present to optimize student achievement. Practice has several purposes. Practicing a skill in varied ways builds different associations, which serve as the basis for generalization (Haring & Eaton, 1978). Practice is also important to bring basic, essential skills to the point of automaticity (Rosenshine, 1983; Samuels, 1981).

The Beginning Teacher Evaluation Study (see Marliave & Filby, 1985) documented that mere practice is not sufficient. Students must practice on appropriate tasks. The student's success rate is one measure of task appropriateness. During guided or initial practice opportunities a student's success rate should be at least 70%, while on later independent activities students should obtain a 90-100% success rate. Since independent seatwork activities comprise about 70% of a student's day, it has repeatedly been suggested that student achievement is improved through active teacher monitoring and increased clarity of task directions (e.g., Good, 1983). Second, appropriate practice tasks are relevant to the teacher's goal and lesson presentation. Durkin (1979), in a major observational study of reading comprehension instruction, found that independent assignments are often unrelated to the instructional goal or lesson presentation. The assignments represented "busy work" or ways to control or manage students.

RECOMMENDED READINGS

Durkin, D. (1979). What classroom observation reveals about reading comprehension instruction. *Reading Research Quarterly, 14*, 481-533.

Good, T.L. (1983). Classroom research: A decade of progress. *Educational Psychologist, 18*, 127-144.

(Continued in next column.)

RECOMMENDED READINGS (continued)

Marliave, R. & Filby, N.N. (1985). Success rate: A measure of task appropriateness. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 217-235). New York: Longman.

Rosenshine, B. & Stevens, R. (1986). Teaching functions. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 376-391). New York: Macmillan.

Samuels, S.J. (1982). Some essentials of decoding. *Exceptional Education Quarterly, 2*, 11-25.

■ *TIES-II* Component 8

Informed Feedback

Feedback and corrective procedures are an integral part of the mastery learning model (Bloom, 1985). In addition, the importance of feedback is consistently mentioned in the various models of school learning, empirically documented teaching programs, and the instructional psychology literature.

For feedback to be most effective it must be task specific and explicit. Students benefit from being told what makes their answer right or wrong. General praise like "good work" is unrelated to student achievement gains. For students with learning problems, encouragement and concentration on student effort are important for increasing achievement.

The most effective feedback provides students with increased opportunity to respond. Therefore, teachers need to use process feedback (provide cues to increase rate of accurate responses) rather than terminal feedback (right, wrong; move to other student). ECRI (Exemplary Center for Reading Instruction) has demonstrated higher reading achievement for elementary students when the teacher uses error correction procedures (Reid, 1986). These procedures provide cues and prompts to guide the student to the correct answer. The rate of student response is important; a higher rate is preferred, and student involvement is emphasized through chorale responses. Errors are monitored carefully, providing the student with corrective feedback and immediate knowledge of results. Instructional psychology consistently includes immediate knowledge of results as an important condition of student learning.

RECOMMENDED READINGS

Bloom, B.S. (1985). Learning for mastery. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 73-93). New York: Longman.

Good, T.L. & Brophy, J.E. (1984). *Looking in classrooms*. New York: Harper and Row.

Leach, D.J. & Ingram, K.L. (1989). The effects of information and feedback on teachers' classroom behavior and students' academic engaged time. *Educational Psychologist, 9*, 167-184.

Reid, E.R. (1986). Practicing effective instruction: The Exemplary Center for Reading Instruction approach. *Exceptional Children, 52*(6), 510-519.

Rosenshine, B. (1983). Teaching functions in instructional programs. *The Elementary School Journal, 83*, 335-351.

Instructional Monitoring and Evaluation Components

■ *TIES-II* Component 9

Academic Engaged Time

Academic engaged time is a moderate predictor of student achievement (Borg, 1980; Karweit, 1983). Good (1983) contends the moderate relationship between engaged time rates and student achievement can be explained by the fact that researchers have not addressed the qualitative nature and appropriateness of instruction. Good has identified effective classroom management practices, quality of instruction, and understanding student perceptions of tasks and directions as three ways to increase students' rates of academic engaged time.

In a comprehensive review of several research approaches studying time on task, Anderson (1984a) outlines key instructional elements related to increasing students' engaged time. These include instruction that is continuous and well-paced, clearly communicated goals, monitoring of student performance, immediate and academically oriented feedback, carefully sequenced materials and tasks, use of reinforcement and praise, sufficient time allocated for instruction, and sufficiently high student success rates.

Maintaining the flow of classroom activity is a critical teacher behavior for maintaining student attention. Kounin's (1970) research indicates teachers need continuously to scan the classroom, use nonverbal signals for reengaging the student, and monitor a subset of students while instructing other students. Karweit (1983) argues that teachers' classroom management practices and established instructional routines are keys to the teachers' success in obtaining high student engagement rates. An important consideration is the relationship between the number of tasks or number of groups occurring simultaneously and the teacher's system for monitoring and providing feedback.

RECOMMENDED READINGS

Anderson, L.W. (1984a). Instruction and time-on-task: A review. In L.W. Anderson (Ed.), *Time and school learning* (pp. 143-163). New York: St. Martin's Press.

Englert, C.S. (1984). Measuring teacher effectiveness from the teacher's point of view. *Focus on Exceptional Children, 17*, 1-14.

Good, T.L. (1983). Classroom research: A decade of progress. *Educational Psychologist, 18*, 127-144.

Greenwood, C.R. (1991). Longitudinal analysis of time, engagement, and achievement in at-risk versus non-risk students. *Exceptional Children, 57*, 521-535.

(Continued on next page.)

RECOMMENDED READINGS (continued)

Karweit, N.L. (1983). *Time on task: A research review* (Report 332). Center for Social Organization. Baltimore, MD: Johns Hopkins University.

▪ *TIES-II* Component 10

Adaptive Instruction

In addition to the early concept of curriculum modification for mildly disabled students in mainstream classes, the notion of adaptive instruction has been viewed as a major way for disabled students to stay in the mainstream and experience a basic level of success. Waxman, Wang, Anderson, & Walberg (1985) have conducted the majority of research in the area of adaptive instruction. They found that the performance of low-achieving students in adaptive instruction classrooms was higher than that of low-achieving students in traditional classrooms. Adaptive instruction classes provide clearly communicated instructional goals at an appropriate level of difficulty, careful monitoring and feedback, a thorough feedback system, and emphasize student responsibility for task completion. The results of a meta-analysis of 38 adaptive instruction studies reveal strong positive academic and behavioral effects.

Wang (1984) supports a school-wide systematic approach to adaptive instruction for servicing students with mild disabilities in the mainstream. The number of options available for adapting instruction, teacher willingness to implement modifications, and the regularity with which the modifications are used comprise critical determinants of the effectiveness of adaptive instructional procedures. Important techniques for adapting instruction to meet individual differences include changing the instructional goal, material, teaching method, or task demands. Monitoring the effectiveness of alternative interventions is supported by research by Deno and his colleagues (Mirkin, Fuchs, & Deno, 1982).

RECOMMENDED READINGS

Corno, L. & Snow, R.E. (1986). Adapting teaching to individual differences among learners. In M.L. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 605-629). New York: Macmillan.

Wang, M.C. (1984). Time-use and the provision of adaptive instruction. In L.W. Anderson (Ed.), *Time and school learning* (pp. 167-203). New York: St. Martin's Press.

Wang, M.C. (1985). An analysis of program design implications for teaching and student use of school time. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 237-262). New York: Longman.

Wang, M.C. & Walberg, H.J. (Eds.). (1984). *Adapting instruction to individual differences*. Berkeley, CA: McCutcheon.

Waxman, H.C., Wang, M.C., Anderson, K.A., & Walberg, H.J. (1985). Synthesis of research on the effects of adaptive education. *Educational Leadership, 43*, 26-29.

▪ *TIES-II* Component 11

Progress Evaluation

The importance of monitoring student progress in order to provide correction and allow students the time needed to achieve mastery is underscored in the mastery learning model (Bloom, 1985). Monitoring student performance during seatwork activities to ensure appropriate success has been documented as an essential correlate of academic achievement (Marliave & Filby, 1985). Gettinger's (1984a) work in time needed to learn strongly supports progress through the curriculum based on mastery.

Based on extensive research on direct and frequent measurement systems, Mirkin, Fuchs, and Deno (1982) recommend the use of student performance data to make subsequent instructional decisions. Emphasis is placed on mastery of specific objectives, keeping records regarding student performance in achieving specific objectives, and informing students of their progress.

Deno supports teachers using direct and frequent measurement for deciding the effectiveness of teaching interventions and for making decisions about whether to reteach, review, or move the student to a new instructional goal. Proponents of direct instruction approaches as characterized by Rosenshine (1983) include systematic reviews as a primary instructional event. Reviews become particularly important if one believes in the mastery learning model.

RECOMMENDED READINGS
Bloom, B.S. (1985). Learning for mastery. In L.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 73-93). New York: Longman.
Deno, S. & Mirkin, P. (1980). Data-based IEP development: An approach to substantive compliance. *Teaching Exceptional Children*, *12*, 92-99.
Gettinger, M. (1984b). Measuring time needed for learning to predict learning outcomes. *Exceptional Children*, *51*, 244-248.
Gettinger, M. (1984c). Achievement as a function of time needed for learning. *American Educational Research Journal*, *21*, 617-628.

■ *TIES-II* Component 12

Student Understanding

Good (1983) has identified student perception of tasks and directions as critical for increasing engaged time and achievement. In particular, research has shown that students' perception of teacher intentions or goals is not always congruent with those intended by teachers (Winne & Marx, 1982). First graders believed their task was to complete assignments and did not process the importance of learning a skill or completing the task accurately (Anderson, 1985a). Research in the area of student cognitions has shown that elementary students do not identify the teacher's goal; goals must be explicitly stated.

Student cognition research (e.g., Peterson, Swing, Stark, & Waas, 1984) has demonstrated that a student's understanding of the task and specific use of cognitive strategies to complete the task are related to student achievement. In fact, the student's ability to understand the assigned task was a better predictor of student achievement than classroom observers' ratings of students' time on task behavior.

RECOMMENDED READINGS
Anderson, L. (1985a). What are students doing when they do all that seatwork? In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 189-202). New York: Longman.
Good, T.L. (1983). Classroom research: A decade of progress. *Educational Psychologist*, *18*, 127-144.
Peterson, P.L. & Swing, S.R. (1982). Beyond time on task: Students' reports of their thought processes during classroom instruction. *The Elementary School Journal*, *82*, 481-491.
Winne, P.H. & Marx, R.W. (1982). Students' and teachers' views of thinking process for classroom learning. *Elementary School Journal*, *82*, 493-518.

Home Support for Learning Components

■ *TIES* Component 13

Expectations and Attributions

Inappropriate attributions and expectations can either discourage academic achievement when they are too high or depress motivation when they are too low. Although the relationship between parent expectations and achievement is complex and may involve many intervening variables, a general conclusion than can be drawn is that academic achievement is consistently correlated with high, realistic parent expectations. We know that:

- Parents' estimates of their children's ability have long-term effects on achievement (Entwisle & Hayduk, 1988);
- Children's perception of high parent expectations correlate with achievement (Johnson et al., 1989);
- Children's own beliefs and expectations about their achievement are highly correlated with those of their parents (Wigfield, 1983);
- Parents' beliefs are more directly related to children's own expectations than are the children's past performances (Parsons et al., 1982); and
- Parent expectations close to the child's actual performance are associated with superior performance on cognitive tasks (Scott-Jones, 1984).

Parent expectations may have an indirect effect on academic performance through impact on parent behaviors such as contact with the school and positive reinforcement of schoolwork (Seginer, 1986). Also, they are influenced by reasons parents ascribe for their children's school performance. In general, the use of effort attributions or an emphasis on hard work and practice to explain school performance is strongly related to positive achievement outcomes and is preferable to the use of ability attributions (Stevenson & Lee, 1990):

- "White collar" parents tend to influence their children's achievement through expectations and modeling, while "blue collar" parents tend to influence their children through expectations only (Cohen, 1987).
- Girls' math aptitude is rated lower by parents than is boys' math aptitude (Holloway, 1986).
- American mothers use ability attributions more than Chinese mothers, who emphasize effort attributions (Stevenson & Lee, 1990).

Finally, stronger correlations between parents' aspirations for their children and children's perceptions of those aspirations with educational and occupational attainment have been found in lower SES than in middle SES families.

In summary, realistic, high parent expectations for children's school performance are associated with positive academic outcomes, regardless if the children's perception of or actual parental expectations are studied. Effort attributions are associated positively with academic achievement. How parents communicate their expectations and attributions to children have been found to differ as a function of gender, SES, and ethnicity.

RECOMMENDED READINGS

Entwisle, D.R. & Hayduk, L.A. (1988). Lasting effects of elementary school. *Sociology of Education*, *61*, 147-159.

Marjoribanks, K. (1988). Perceptions of family environments, educational and occupational outcomes: Social-status differences. *Perceptual and Motor Skills*, *66*, 3-9.

McGillicuddy-DeLisi, A.V. (1982). The relationship between parents' beliefs about development and family constellation, socioeconomic status, and parents' teaching strategies. In L.M. Laosa & I.E. Siegel (Eds.), *Families as learning environments for children* (pp. 261-299). NY: Plenum Press.

Parsons, J.E., Adler, T.F., Karzala, C.M., & Meece, J.L. (1982). Socialization of achievement attitudes and beliefs: Parental influences. *Child Development*, *53*, 310-321.

Seginer, R. (1983). Parents' educational expectations and childrens' academic achievements: A literature review. *Merrill Palmer Quarterly*, 29, 1-23.

Stevenson, H.W. & Lee, S. (1990). Contexts of achievement: A study of American, Chinese, and Japanese children. *Monographs of the Society for Research in Child Development*, *55*, 1-106.

Thompson, M.S., Alexander, K.L., & Entwisle, D.R. (1988). Household composition, parental expectations, and school achievement. *Social Forces*, 67, 424-451.

■ *TIES-II* Component 14

Discipline Orientation

Authoritative discipline, which is characterized by establishing clear standards, enforcing rules, and encouraging discussion and joint decision making is positively associated with student achievement. In contrast, permissive and authoritarian discipline approaches are negatively correlated with student achievement. Thus, over- and under-control are correlated negatively with students' grades and standardized test performance. Ethnicity is an intervening variable in these relationships. For example, the impact of the authoritarian style appears to be less negative for Asian children (Dornbush et al., 1987).

Parental encouragement is an important variable for school productivity. High achievers report receiving more encouragement from their parents than do under-achievers. Parental encouragement is associated positively with academic performance if the student is performing and doing reasonably well in school (e.g., grades of C or better). Parental behaviors that were not associated with improvements in academic performance are punishment, reward, expression of negative emotion, or uninvolvement.

An appropriate degree of parental monitoring and supervision of children's use of time, peer contacts, and out-of-school activities characterizes the authoritative parenting style. Although monitoring and supervision are positive correlates of academic outcomes, they need to be combined with appropriate discipline strategies, particularly delivery of consequences and rule negotiation. Patterson (1982) described the negative interaction pattern between child and parent found in many children labeled antisocial as coercive family process. He showed that antisocial behavior in the home accounted for 50% of the variance in measures of antisocial behavior at school, and is correlated with low rates of academic engagement, poor homework completion, and poor academic performance. Coercive family process occurs when parents of antisocial children react to their child's behavior with much negative reinforcement that escalates into conflictual interactions, limited monitoring, and follow through by the parents in order to avoid the negative interactions with their child.

RECOMMENDED READINGS

Dornbusch, S.M. & Ritter, P.L. (1992). Home-school processes in diverse ethnic groups, social classes, and family structures. In S.L. Christenson & J.C. Conoley (Eds.), *Homeschool collaboration* (pp. 111-125). Colesville, MD: National Association of School Psychologists.

Dornbusch, S.M., Ritter, P.L., Leiderman, P.H., Roberts, D.F., & Fraleigh, M.J. (1987). The relation of parenting style to adolescent school performance. *Child Development*, *58*, 1244-1257.

Dornbusch, S.M., Ritter, P.L., Mont-Reynaud, R., & Chen, Z. (1990). Family decision-making and academic performance in a diverse high school population. *Journal of Adolescent Research*, *5*(2), 143-160.

Dornbusch, S.M. & Wood, K.D. (1989). Family processes and educational achievement. In W.J. Weston (Ed.), *Education and the American family* (pp. 66-95). New York: New York University.

Patterson, G.R. (1982). *Coercive family processes.* Eugene, OR: Castalia Press.

Walberg, H.J. (1984). Families as partners in educational productivity. *Phi Delta Kappan*, *65*, 397-400.

■ *TIES* Component 15

Home Affective Environment

Home affective environment refers to the emotional environment in the home, particularly the relationship between parents and their child. The degree to which this relationship is characterized by parental acceptance of the child's strengths and weaknesses, nurturance, encouragement, involvement, and emotional

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responsiveness to the child's needs influences the child's school productivity.

In general, a positive parent-child relationship is related to academic success. We know that:

- A positive affective parent-child relationship increases the probability that the child will initiate and persist in challenging, intellectual tasks (Estrada et al., 1987) and be socially competent (Bretherton, 1985);
- Parent behaviors related to school productivity are amount of interaction, engagement in problem-solving activities with the child, and encouraging the child to explore so as to stimulate the child's curiosity (Ferguson, 1987), and
- Maternal qualities related to the child's cognitive growth and motivation include positive reinforcement, consultation with the child, and sensitivity to the child's needs (Radin, 1971).

Parents of children with learning problems should be particularly conscious of how their reactions and affective responses may influence their children. Mothers of children with learning disabilities viewed their child's successes less positively and failures more negatively than mothers of children without disabilities (Pearl & Bryan, 1982). Failure of these children is more often attributed to ability than to luck (Tollison et al., 1987).

In summary, parents who accept, nurture, encourage, and are emotionally responsive to their child's developmental needs tend to have children who are successful in school. This affective relationship is not associated with IQ, SES, or gender of the child.

RECOMMENDED READINGS

Bradley, R. & Caldwell, B.M. (1984). The relation of infant's home environments to achievement test performance in first grade: A follow-up study. *Child Development, 55*, 803-809.

Erickson, M.F. & Pianta, R.C. (1989). New lunchbox, old feelings: What kids bring to school. *Early Education and Development, 1*(1), 35-49.

(Continued in next column.)

RECOMMENDED READINGS (continued)

Estrada, P., Arsenio, W.F., Hess, R.D., & Holloway, S. (1987). Affective quality of the mother child relationship: Longitudinal consequences for children's school-relevant cognitive functioning. *Developmental Psychology, 23*, 210-215.

Hess, R.D. & Holloway, S.D. (1984). Family and school as educational institutions. In R.D. Parke, R.M. Emde, H.P. McAdoo, & G.P. Sackett (Eds.), *Reviewing child development research: Vol. 7: The family* (pp. 179-222). Chicago: University of Chicago Press.

Hess, R.D., Holloway, S.D., Dickson, W.P., & Price, G.G. (1984). Maternal variables as predictors of children's school readiness and later achievement in vocabulary and mathematics in sixth grade. *Child Development, 55*, 1902-1912.

Pearl, R. & Bryan, T. (1982). Mothers' attributes for their learning disabled child's success and failures. *Learning Disability Quarterly, 5*, 53-57.

Portes, P.R., Dunham, R.M., & Williams, S. (1986). Assessing child-rearing style in ecological settings: Its relation to culture, social class, early age intervention, and scholastic achievement. *Adolescence, 22*(83), 723-735.

■ *TIES* Component 16

Parent Participation

Parent participation refers to parent involvement in the child's schooling at school and at home. Therefore, it includes the degree to which the home supports educational goals and learning—or the degree to which the home emphasizes achievement and intellectual pursuits, or the degree to which the home is an educative environment. Many researchers refer to this kind of environment as one which has a "press for achievement" (Marjoribanks, 1979).

In a review of 18 parent involvement studies, Henderson (1989) concluded that parent involvement correlated highly with positive academic outcomes. Children whose parents were involved in their schooling had gains in reading and math achievement, better attendance, completed more schoolwork, and participated more in class. They also had fewer behavior problems and fewer suspensions. However, she also reported that simply involving parents at home was not enough to improve a school's average level of achievement. In order for the school as a whole to benefit, parents must be involved in meaningful activities at school. Dramatic achievement gains have been demonstrated for inner-city children and youth when parents are involved in school governance and decision-making activities and when the school becomes a community school (Comer, 1984).

Because of the multiple demands on parents' lives, parent involvement at home is considered a practical alternative for many parents. School-based home instruction programs have demonstrated large positive effects on children's academic learning, in part because the quantity of academic instruction is increased, and in part because children's motivation for classroom learning is increased through closer and more constructive home-school connections (Graue, et al., 1983).

The positive effects of home learning activities are most often demonstrated with reading. It appears that many home activities increase student's reading achievement: parents encouraging children to read, children reading to parents, parents reading to their children, parents initiating discussions about books, and parents modeling reading and learning (Searls et al., 1982).

Opportunities to engage in learning is essential. The presence of educationally stimulating materials (books, games, records) has been found to be associated with student achievement (Hess et al., 1982; Bradley & Caldwell, 1976). Verbal interaction in the home is another variable affecting achievement. High levels of encouragement, verbal guidance, complex language use, participation in meal-time conversations, and verbal interaction are associated positively with academic achievement (Goldenberg, 1987; Portes et al., 1984; Snow, 1983).

In summary, parents participate both in education at school and at home. There is a substantial body of literature that documents the positive effects of meaningful parent participation on student achievement. There is some evidence to show that the effects are most robust when parents are involved at both home and school. The efficacy of parent involvement in home learning activities that support school instruction is strong and well-founded. These findings lend credence to Hansen's (1986) finding that children achieve more when there is a match between home and school rules, interactions, and expectations.

RECOMMENDED READINGS

Clark, R.M. (1988). Parents as providers of linguistic and social capital. *Educational Horizons, 66*(2), 93-95.

Comer, J.P. (1984). Home-school relationships as they affect the academic success of children. *Education and Urban Society, 16*(3), 323-337.

Epstein, J.L. (1987a). Parent involvement: What research says to administrators. *Education and Urban Society, 19*, 119-136.

Graue, M.E., Weinstein, T., & Walberg, H.J. (1983). School-based home instruction and learning: A quantitative analysis. *Journal of Educational Research, 76*(6), 351-360.

Keith, T.Z. (1991). Parent involvement and achievement in high school. In S.B. Silvern (Ed.), *Advances in reading/language research: Vol. 5. Literacy through family, community, and school interaction* (pp. 125-142). Greenwich, CT: JAI Press.

Sattes, B. (1985). *Parent involvement: A review of the literature* (Report No. 21). Charleston, WV: Appalachia Educational Laboratory.

Sloane, K.D. (1991). Home support for successful learning. In Silvern, S.B. (Ed.), *Advances in reading/language research: Vol. 5. Literacy through family, community, and school interaction* (pp. 153-172). Greenwich, CT: JAI Press.

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RECOMMENDED READINGS (continued)

Swap, S. (1990). *Parent involvement and success for all children: What we know now.* Boston, MA: Institute for Responsive Education.

Tizard, J., Schofield, W., & Hewison, J. (1982). Collaboration between teachers and parents in assisting children's reading. *British Journal of Education, 52*, 1-15.

■ *TIES* Component 17

Structure for Learning

Structure for learning refers to the structure of the home environment and how the environment can be manipulated to encourage and provide assistance to the child in completion of schoolwork. It includes such areas as homework, adult assistance with schoolwork, and time monitoring of other activities to ensure homework completion or involvement in other learning activities.

In general, students assigned homework tend to achieve higher grades and perform better on standardized tests than those assigned no homework (Clark, 1983; Foyle, 1987). The amount of time spent on homework is directly related to the achievement of both elementary and secondary students, but the beneficial effects are especially clear for secondary school students (Cooper, 1989). Even though homework has less direct impact on achievement for elementary students, benefits for this age group include developing positive attitudes toward school and studying, and encouraging learning outside of the classroom.

Feedback and reinforcement produce higher student achievement; therefore, graded homework has a stronger impact on achievement (Keith, 1987; Paschal et al., 1984). Parents have been encouraged to be part of the homework process by providing a structure conducive to studying in the home. Recommendations include:

1. Appropriate space to complete homework,
2. An established schedule,
3. Adequate lighting and essential materials, and
4. Teacher support by providing reward, checking homework, and stressing the value of school (Cooper, 1989).

Walberg et al. (1980) implemented a home-school contract system that incorporated several of these components. Parents, teachers, and students agreed to specific roles and responsibilities around completion of schoolwork. Students involved consistently in the home-school intervention gained .6 grade equivalent more than students involved inconsistently. The researchers concluded that students can make substantial progress provided educators and parents work cooperatively in pursuit of common goals. The structure provided by the home, especially a quiet place to study, discussion of schoolwork, and parental recognition of their child's progress was identified as an essential reason for the achievement gains demonstrated.

Monitoring of children's use of out-of-school time (Walberg, 1984) is an important way that parents structure opportunities for learning. Children engage in many competing activities for completion of schoolwork, one of which is television. There is a negative association between achievement and amount of television viewing (Williams et al., 1982). In general, students who view a great deal of television (more than six hours a day) have significantly lower achievement scores in reading, math, and writing. Small amounts of television may increase achievement for disadvantaged children. As homework demands increase, Keith and his colleagues (1986) conclude that television viewing must decrease to ensure adequate time for reading and studying.

In summary, parents provide a structure for learning by monitoring children's time for schoolwork completion, assisting in schoolwork if needed, and limiting television viewing and other competing outside activities so the child can participate in educationally relevant activities.

RECOMMENDED READINGS

Cooper, H. (1989). Synthesis of research on homework. *Educational Leadership, 47*, 85-91.

Fetler, M. (1984). Television viewing and school achievement. *Journal of Communication, 34*(2),104-118.

Keith, T.Z., Reimers, T., Fehrman, P.G., Pottebaum, S.M., & Aubey, L.W. (1986). Parental involvement, homework, and TV time: Direct and indirect effects on high school achievement. *Journal of Educational Psychology, 78*, 373-380.

Paschal, R.A., Weinstein, T., & Walberg, H.J. (1984). The effects of homework on learning: A qualitative synthesis. *Journal of Educational Research, 78*, 97-104.

Ridley-Johnson, R., Cooper, H., & Chance, J. (1982). The relation of children's television viewing to school achievement and IQ. *Journal of Educational Research, 76*, 294-297.

Searls, D.T., Mead, N.A., & Ward, B. (1985). The relationship of students' reading skills to TV watching, leisure time reading, and homework. *Journal of Reading, 29*, 158-162.

Williams, P.A., Haertel, E.H., Haertel, G.D., & Walberg, H.J. (1982). The impact of leisure-time television on school learning. *American Educational Research Journal, 19*, 19-50.

Methods Used to Gather Data

Four steps are followed to conduct a *TIES-II* evaluation:

1. Understand the teacher's concern for an individual student.
2. Decide what data or information the team needs about the student's instructional experiences in classroom or home contexts, and identify the corresponding data-gathering tools to gather the information.
3. Collect the information in a systematic fashion by using the specified data-gathering tools. Other supplemental environmentally based assessment approaches (e.g., task analysis, error analysis) can be used by team members.
4. Conduct a collaborative intervention planning session. At this session, team members systematically discuss information collected and plan an intervention to address the teacher's referral concern.

Understanding the Teacher's Concern

The teacher's referral concern begins the data collection process in a *TIES-II* evaluation. It is helpful for the teacher to describe: (1) the student's actual level of performance (i.e., problematic behavior) or behavior in specific, observable language; and (2) the desired level of performance (i.e., acceptable behavior) or behavior for the student in specific, observable language. The referral concern is recorded on the Instructional Environment Form and/or the Intervention Planning Form.

Selecting Data-Gathering Tools

Next, members of the collaborative team (e.g., psychologist-teacher, student-staff support team) should decide which data gathering tools are needed to address the referral concern. Options are:

- Completion of the Instructional Needs Checklist by the referring teacher, followed by a collaborative planning session (see Chapter 3, Putting the Pieces Together) with the collaborative team. Expediency is the advantage of this option. A drawback is that collaborative team members do not observe or interview the child. However, observation and interviewing may not be necessary to design an intervention to address all student concerns.
- Completion of the Instructional Environment Form by members of the collaborative team and by the referring teacher, followed by a collaborative planning session with the collaborative team. For

members of the collaborative team to complete this form, the student must be observed using the Observation Record, the student must be interviewed using the Student Interview Record, and the teacher must be interviewed using the Teacher Interview Record. The same team member could complete the three activities or team members could share the activities.

After a classroom observation and teacher and student interviews are completed, the collaborative team members judge the degree to which the 12 instructional environment components are present and important for the target student. The referring teacher makes the same judgments. Similarities and discrepancies in ratings are discussed. This discussion yields a richer understanding of the students' instructional behavior and instructional environment. The referring teacher does not have to complete the Instructional Environment Form. However, teacher input results in a more efficacious and realistic intervention plan.

The advantage of this option is that members of the collaborative team have a systematic way to describe the students' instructional needs in the classroom context. All members are using a common language. The disadvantage, for some school professionals, is the time involved. Classroom observations are generally for one class period (i.e., 45-60 minutes), student interviews average 35 minutes, and teacher interviews average 30 minutes. Classroom observations usually occur during the class in which the student is having difficulty. This is an important class in which to observe. However, users of *TIES-II* are encouraged to also observe the student in a class in which the student is not having difficulty. Locating exceptions for student performance and identifying the student's strengths are helpful for intervention planning. This does increase the amount of time to collect these data. Some school professionals consider this time well spent when an efficacious intervention is designed.

- Completion of the Home Support for Learning Form by the individual who interviewed the parents of the target student with the Parent Interview Record, followed by a collaborative planning session. A face-to-face interview, which will take 45 to 60 minutes to complete, is preferable. Other ways to collect these data include a phone interview and parent completion of the form at home (i.e., survey format). After the information is obtained from the parent, the *TIES-II* user judges the degree to which the five home support for learning components are present for the target student. The advantage of the Home Support for Learning Form is that educators have a systematic way to gather information from parents to design realistic, feasible interventions supported by parents.

Collaborative team members may decide to use one, two, or all three of the options. The team decides how much and what kind of information are needed to plan an intervention. Team members could choose to collect data only from parents. In this instance the Home Support for Learning Form would be used when completing the Intervention Planning Form. They could choose to collect data about the student's instructional needs in the classroom and home. In this instance, the Instructional Environment Form and the Home Support for Learning Form would be used when completing the Intervention Planning Form. One collaborative planning session is necessary after home and classroom contextual data are collected and summarized.

Collecting Data

Team members can always add other data-gathering tools. School psychologists often use environmentally-based approaches, such as work sampling, error analysis, think-out-loud procedures, task analysis, curriculum-based assessment, and diagnostic teaching to decipher why a student is having difficulty learning specific skills or concepts. These analogue procedures for assessing academic activities, which have been described in detail by Gettinger (1988) and appear in Table 2-1 may be incorporated into a *TIES-II* evaluation. This is a decision made by team members. These procedures should be added only if they help team members describe the student's instructional needs in relation to the 12 instructional environment components.

Although the *TIES-II* Student Interview Record provides the opportunity for an examiner to review the student's classroom assignments and work, we encourage users of *TIES-II* to engage in a more thorough review of the student's work products. Analysis of daily independent assignments, homework, and tests help to provide a picture of a student's written responses and success rate. Users of *TIES-II* may find it helpful to ask the referring teacher to copy the student's independent seatwork assignments for a two-week period. For each assignment, the teacher should estimate the student's success rate on tasks and record the student's actual success rate. The discrepancy between estimated and actual performance has been used as an indicator of instructional match (Marliave & Filby, 1985).

During the student interview, users of *TIES-II* may also find it helpful to conduct a task analysis and a process analysis. For task analysis, the examiner identifies whether the student has mastered subtasks or subskills for the skill currently being instructed. For process analysis, the examiner's goal is to understand the way the student approaches the assigned task. To accomplish this, the examiner could conduct an error analysis to determine types of student errors. Errors may be due to a pattern (e.g.,

Table 2-1

Types of Analogue Procedures for Assessing Academic Abilities

Procedure	Description
Diagnostic Teaching	Simulated instruction that evaluates effectiveness of remedial strategies and identifies conditions under which skills are acquired.
Task Analysis	Focuses on student's level of skills in relation to instructional objective by breaking down tasks into component skills and assessing mastery of these skills.
Error Analysis	Identification of item types that are consistently failed/passed and formulation of tentative hypotheses about the student's deficits/abilities.
Modified Testing	Techniques to alter or expand standardized testing procedures (modality, language, time) to determine why a student erred in responding.
Curriculum-Based Assessment	Procedure for determining instructional needs on the basis of evaluating continuous performance on existing course content and curriculum.
Work Sampling	Systematic evaluation of samples of work (writing samples, tests, completed workbook pages) that reflect the student's learning problems/strengths.

Source: Gettinger, M. (1988). Analogue assessment: Evaluating academic abilities. In E.S. Shapiro & T.R. Kratochwill (Eds.), *Behavioral assessment in schools* (pp. 247-289). New York: Guilford Press.

unlearned concepts, use of faulty algorithms) or may be random. The examiner may apply think-out-loud procedures by examining the student's strategies for problem solving as the student describes what he or she is doing when performing the instructional task. The latter approach enables the examiner to judge the student's use of cognitive strategies.

RECOMMENDED RESOURCES

Helpful references for these procedures include:

- **Gettinger, M. (1988). Analogue assessment: Evaluating academic abilities. In E.S. Shapiro & T.R. Kratochwill (Eds), *Behavioral assessment in schools* (pp. 247-289). New York: Guilford Press.**
- **Howell, K.W. (1986). Direct assessment of academic performance. *School Psychology Review, 15*(3), 324-335.**
- **Rosenfield, S.A. (1987). *Instructional consultation*. Hillsdale, NJ: Lawrence Erlbaum.**
- **Shapiro, E.S. (1989). *Academic skill problems: Direct assessment and intervention*. New York: Guilford.**

Conducting the Intervention Planning Session

Team members may observe in different settings (e.g., reading, math) and may conduct multiple observations in one setting. More often than not, time constraints determine the number of observations and interviews that are feasible. After data are collected, members of the collaborative team meet to plan an intervention. Interpretation of the observational and interview data and the recommended collaborative intervention planning sequence are described in Chapter 3, Putting the Pieces Together.

Prerequisites for Using *TIES-II* Effectively

Describing a student's instructional needs within context is a complex task, one which requires the examiner to be skilled in different environmentally based assessment approaches, to use effective communication strategies, and to integrate information from different assessment approaches and multiple sources. *TIES-II* is a system that provides the examiner with a structure. *TIES-II* is a multimethod, multisource system for understanding the student's instructional needs. It is a system that assumes the examiner has several competencies in assessment and consultation. Seven prerequisites for using *TIES-II* are described.

First, individuals trained in the assessment of students are qualified to use *TIES-II*. Professionals who conduct assessments, compile assessment data, or are part of a multidisciplinary study team qualify to use *TIES-II*. These professionals may include school psychologists, school counselors, teacher consultants, special educators, teachers, school social workers, clinical psychologists, and educational diagnosticians. School administrators or teacher supervisors who are not part of the assessment team are qualified to use *TIES-II* only if they have training in the assessment of students. Users of *TIES-II* must have knowledge about and skill in observation, interviewing, and collaborative consultation. Despite the training provided many educators (e.g., school psychologists, school social workers, counselors, special educators, teacher consultants, educational diagnosticians), many professionals may find the resources for observation, interviewing, and consultation listed in Appendix E helpful.

Second, the professional using *TIES-II* should have educational training in or knowledge of the components of effective instruction and home influences on school productivity. While some teacher training, school psychology, and counseling programs provide this training, users need to be well-informed about the instructional effectiveness and home environmental literatures. Chapter 5 of this manual, Correlates of Academic Achievement, provides an integrative review of these literatures and a comprehensive bibliography.

Third, users of *TIES-II* must prepare. The effective use of *TIES-II* requires knowledge of the instructional effectiveness and home support for learning literature. It also requires knowledge of the administration, scoring, and interpretation procedures. Anyone who administers *TIES-II* should read Chapter 5 of this manual and become familiar with the content of the descriptors that appear in Appendix B. It is not necessary to memorize the descriptors for components; however, the examiner should be able to articulate the content of each component before observing and interviewing. In this system, all observations and interviews are student focused in reference to the *TIES-II* components. The examiner must think about what he or she is observing in relation to the 12 instructional environment and five home support for learning components. The examiner must also think about what interviewees report in relation to the components.

Learning the components is a process and can be accomplished only by engaging in a *TIES-II* assessment. We joke about how *TIES-II* is like sailing (admittedly not as fun!). One simply can't learn to sail a 35-foot yacht by reading about how to luff up (i.e., turn towards the wind), how to bear away (i.e., turn away from the wind), how to rig the jib, etc. Similarly, one has to observe and interview using *TIES-II* components. This means one observes a student while thinking of the referral concern and the 12 instructional environment components, one interviews teachers and the student while thinking of the 12 instructional environment components, and one interviews parents while thinking of the five home support for learning components. **It is this systematic use of information in relation to the student that makes *TIES-II* different than other interview or observational approaches**.

Thus, examiners must know the content of the 12 instructional environment and five home support for learning components. Referring to the descriptors, engaging in discussions about the components with colleagues, and actual use of the components is the best way to learn *TIES-II* components. The descriptors and the component descriptions on the Instructional Environment Form and the Home Support for Learning Form provide the road map for what to observe and guidelines for making the judgments about the presence and importance of the components for the student. As in driving, over time one becomes less dependent on a road map; so, too, in using *TIES-II* you should become less and less dependent on using the descriptors.

Fourth, as indicated, users of *TIES-II* must be knowledgeable about the principles of collaboration and collaborative consultation. More efficacious interventions are developed when key players in a child's life share responsibility for the success of the student and come together to brainstorm ideas about how to improve student performance. Quite simply, we believe "two heads are better than one" in designing what to do, and we believe educators, particularly classroom teachers, are helped when additional support/resources are provided to them. A collaborative stance among team members is needed to use *TIES-II* effectively.

Fifth, users must recognize that *TIES-II* is a system to identify a student's instructional needs in the classroom and home. It is a system that points out instructional processes (e.g., feedback) that need to be modified for the student. It does not tell users which strategy to use. Therefore, users of *TIES-II* will find the system most useful if they know a lot about specific interventions. Although this is a relatively new area for many professional in schools, fortunately many helpful resources are available. Some are listed in Appendix E.

Users of *TIES-II* are also encouraged to create an intervention resource file by recording helpful interventions and ideas from problem-solving meetings by category (e.g., ways to increase feedback, helping students stay on task). Individuals can add to this file from knowledge gained by reading and attending staff development sessions. Our main point is that the collaborative team needs resources to plan the most efficacious interventions.

Sixth, users of *TIES-II* must make cooperative connections with parents. They need to employ the philosophy articulated at the end of Chapter 5, Correlates of Academic Achievement. In particular, they need to:

1. Invite parents to help them solve the teacher's educational concerns for their child,
2. Be tolerant of and nonjudgmental about the ways parents indicate they can help, and
3. Listen to parents' needs and provide the kind of support parents are requesting.

Many times parents need specific information and support on how to help their child at home.

Finally, users of *TIES-II* must recognize that this system provides a snapshot of what the student's instructional experience is like. We admit that the system relies on users' clinical judgment about what the student needs and what intervention(s) should be tried. This is the exciting part of using *TIES-II*. We believe educators are competent and interested in helping students learn. With a framework around which to guide decisions, educators must select the intervention, monitor the implementation of the intervention, and assess whether the intervention has influenced the original referral concern. Thus, it is the collaborative process that is integral to the success of this system.

Collaborative teams, using *TIES-II*, must share information about the student and the problem context (e.g., classroom constraints). They must trust what members of the team say. They must understand that the system provides a "snapshot" of the student (as do all interviewing and observation methods) and that the ongoing observations of the team members about the student are important in designing interventions. We encourage team members to recognize the dynamic nature of a student's instructional environment and to be willing to make modifications to achieve the best assessment-to-intervention link.

3

PUTTING THE PIECES TOGETHER

TIES-II is a system that provides educators a way to organize their observational and interview data to identify a student's instructional needs in the classroom and/or home contexts, and to use this information to plan an intervention to enhance student learning. The data-gathering tools and forms were described in Chapter 2, Methodology. We now provide guidelines for putting the pieces of information together to plan an intervention. In this section, you will learn about recommended ways to interpret *TIES-II* data and engage in the collaborative intervention planning process.

Interpreting *TIES-II* Data

Two data-gathering forms, the Instructional Environment Form and the Home Support for Learning Form, require users to make judgments about the presence of the 17 *TIES-II* components for the target student. In addition, users must also judge the importance of *TIES-II* components for that student on the Instructional Environment Form (*TIES-II* Components 1-12). Guidelines for interpreting information for each form are described.

TIES-II is not a system that generates scores in the traditional assessment process. Rather, *TIES-II* uses two concepts—**presence** and **importance**—to help educators organize information collected about learning environmental influences for an individual student. Educators make a judgment about whether a *TIES-II* component is currently present for an individual student, and important for that student's learning progress. These ratings are a way to organize observations about the student's instructional needs, which should be discussed during the intervention planning session.

■ Instructional Environment Form

Ratings

The Instructional Environment Form can be completed by a member of the collaborative team (e.g., school psychologist), the referring teacher, or both the team member and teacher. Members of the collaborative team must complete a classroom observation and student and teacher interviews before rating the 12 instructional environment components. Teachers do not have teacher and student interview data available; however, their daily experience with the target student enables them to make the required judgments on the 12 components. Users of *TIES-II* (e.g., team member and referring teacher) read the description of each component and the factors that comprise it. They rate the extent to which the factor is present in the student's instructional environment on a four-point scale, ranging from Strongly Disagree (SD) to Strongly Agree (SA). Information from all three sources must be integrated before deciding which category (i.e., Strongly Agree [SA], Agree [A], Disagree [D], Strongly Disagree [SD]) best represents each of the 12 instructional environment components of *TIES-II*.

Education professionals are cautioned not to make premature judgments. They may want to form hypotheses after a classroom observation, or after a classroom observation and one interview. Forming hypotheses is acceptable provided they are willing to have their hypotheses confirmed or disconfirmed by data provided by subsequent interviews or observations.

Educators also rate the importance of each component for the individual student. The best way to rate the importance is to think of the student's instructional needs and personal characteristics, and whether an instructional change explicated by the component might result in improved performance for this student. The degree to which the component is important to enhance the target student's instruction is rated on a four-point scale, ranging from Strongly Disagree (SD) to Strongly Agree (SA).

Knowledge Base

To make a judgment about the presence and importance of the instructional environment components (*TIES-II* Components 1-12), one must know the instructional effectiveness literature (see Chapter 5, Correlates of Academic Achievement) and the content of the *TIES-II* components (see Chapter 2, Methodology, and the descriptors in Appendix B). It is helpful for individuals to record the basis for their ratings. They should ask themselves, "What specifically did you see or did you hear that led you to your judgment that the component was or was not present for the target student?" Some individuals have found it easy to record this information directly on the Instructional Environment Form. They simply put a "+" or "-" next to each factor to take into consideration when rating a component.

Making Global, Integrative Judgments

Making global, integrative judgments will be easier if one thinks of how often in the everyday world global, integrative, qualitative ratings are made. The rating criteria for *TIES-II* are like evaluating a college course, rating musicians in a contest, ranking contestants in a beauty contest, or judging the cleanliness of a restaurant or the service of airline personnel. In each case, the criteria used to make the rating cannot be spelled out exactly. The rating is made by taking into consideration several variables which are rated against a standard. Two examples, restaurant ratings and theatrical awards, serve to explicate the kind of rating used in *TIES-II*. We hope these examples help you to understand the mindset needed to make the judgments about the *TIES-II* components:

1. **Restaurant ratings.** Upon arriving in a new city, travelers depend on restaurant descriptions to select a dinner site. Many travelers consult restaurant critics. How does a restaurant receive a 5- or 3-star rating? What is the difference between restaurants with these ratings? In granting these ratings, the critic must take many variables into consideration: the ambiance, the attentiveness of the staff, the quality of food, the presentation of the food, the variety of food, the consistency with which the food is prepared and served, and the price.
2. **Theatrical awards.** What factors are considered in presenting the "musical of the year" award? There are several. They include the content, the music, the acting, the staging, the directing, the costumes, the set design, the casting of characters, and so on.

Importance of the Whole Picture

In each of these examples, one factor does not necessarily outweigh another in significance. When making judgments about a restaurant or musical award, all factors must be considered and integrated. The whole picture is important. Similarly, *TIES-II* requires the user to consider several variables (indicated on the scale and explicated in the descriptors) when rating the extent to which each of the 12 instructional environment components is characteristic of the target student's instruction. An exact meaning for an SA, A, D, or SD rating is not defined. Rather, users must consider several factors, integrate the information obtained from observations and interviews (or daily experience with the student in the case of the referring teacher's ratings), and decide whether an SA, A, D, or SD rating best characterizes the student's instruction. You must think, for example, "This, this, and this, but not this were occurring for the student; therefore I will give an A (Agree) rating."

The two ratings for the 12 instructional environment components help to organize information about the student's instructional needs in the context of the classroom. The ratings are best conceived of as a way to organize one's observations or perceptions about the student. They should not be thought of as scores, but rather as a way to share information at the collaborative intervention planning session. The 12 instructional components provide a common language to think about how best to design an intervention.

Patterns in Ratings

For each component, there are four possible outcomes as the result of the ratings. Components may be judged to be: (1) present and important, (2) present and unimportant, (3) not present and important, and (4) not present and unimportant. Important and present are indicated by ratings of Agree (A) and Strongly Agree (SA); unimportant and not present are indicated by ratings of Disagree (D) and Strongly Disagree (SD). It should be clear that the focus for intervention planning begins with the importance rating. Components that are judged to be important and present should be retained. Components that are judged to be important and not present should be addressed.

One must be aware that there are many reasons why a component may not be present. Some include:

- The component is not considered important to enhance student learning,
- Classroom composition or the needs of other students interfere with the delivery of this component for this student at this time, or
- Other resources or support are needed for this component to characterize the student's instructional environment.

Therefore, blaming teachers or parents is not the intent of data collection in the *TIES-II*.

■ Home Support for Learning Form

The educator who interviewed parents of the target student rates the extent to which the five home support for learning components (*TIES-II* Components 13-17) are present in the student's home environment. Ratings are made on a four-point scale, ranging from Strongly Agree (SA) to Strongly Disagree (SD). Guidelines for making these ratings are identical to those used for making ratings on the Instructional Environment Form.

Users of *TIES-II* collect information on how parents say they can and want to help their child learn at home. While educators can make requests for parental assistance, it is essential for them to understand that parents may want to assist, but because of multiple demands in their personal lives or the adverse living conditions in which they reside, they cannot help at that point in time. It is also essential for them to understand that parents may want to help, but may need specific instruction about how to help. They may also need ongoing support from educators to continue the home support for learning program. Working with parents is not as simple as telling them what to do.

Summary

TIES-II is used to make ratings that help organize the observations and perceptions about a target student's instructional needs in classroom and home contexts. The ratings are an integral part of *TIES-II*. They create a common language around which to discuss intervention plans for a student. This common language (discussion of the *TIES-II* components) enables information exchange between collaborative team members.

We turn now to a description of the recommended collaborative intervention planning sequence. We view this sequence as flexible, in that we expect educators to modify it in a way that works for them in their school. However, educators must retain the problem-solving format to address a specific teacher referral concern in planning an intervention.

The Collaborative Intervention Planning Process

The recommended collaborative intervention planning process is outlined on the Intervention Planning Form, which is provided in Appendix A. All team members (e.g., referring teacher, psychologist, intervention assistance team members) meet to share information and plan an intervention to address the teacher's concern for the student. At this session, it is a good idea to bring the data-gathering forms used. The data-gathering tools used should be easily available; however, teams seldom refer to these because **the basis of the *TIES-II* planning is the 17 *TIES-II* components**.

A blank copy of the Intervention Planning Form should be available at this meeting. (This form may be copied, see Appendix A.) It is important for one team member to facilitate the planning process. The nine steps on the form outline the recommended process, and if followed, help to focus information exchange and intervention design. The nine steps included on the form follow:

Step 1

Describing the Teacher Concern

The referring teacher states the actual level of performance of the student and the desired level of performance for the student. Specific, observable, measurable language should be used. The goal of the planning team is to design an intervention to help close the discrepancy between actual (i.e., problematic) and desired (i.e., acceptable) levels of student performance in the classroom. These levels are recorded on the Intervention Planning Form.

Step 2

Sharing Information

Team members share information obtained about the instructional environment *TIES-II* Components 1-12 by discussing four broad categories: (1) Instructional Planning, (2) Instructional Management, (3) Instructional Delivery, and (4) Instructional Monitoring and Evaluation. For this information sharing we offer two guidelines:

1. Team members should identify their ratings for components in each of the four categories that are considered by them as: (1) important and present, and (2) important and not present.
    - For the discussion of Instructional Planning, team members share their observations and perceptions for the components Instructional Match and Teacher Expectations.
    - For the discussion of Instructional Management, team members share their observations and perceptions of the component Classroom Environment.
    - For the discussion of Instructional Delivery, team members share their observations and perceptions of the components Instructional Presentation, Cognitive Emphasis, Motiva-

tional Strategies, Relevant Practice, and Informed Feedback.

- For the discussion of Instructional Monitoring and Evaluation, team members share their observations and perceptions for the components Academic Engaged Time, Adaptive Instruction, Progress Evaluation, and Student Understanding.

It is not necessary to discuss all 12 instructional environment components. It is necessary to discuss the four broad categories, and team members should be prepared to discuss what they believe is important for the student to learn and make progress. Team members may want to focus their discussion on student needs by asking, for example, "What are the target student's needs in the area of Instructional Planning?" (or Instructional Management or Instructional Delivery or Instructional Monitoring and Evaluation).

There is no implication that the referring teacher must be able to make this happen. In fact, because of the multiple demands in a classroom, a task that faces the team is to think broadly about how the student's instructional needs may be addressed. Again, we recommend that team members focus their discussion on salient intervention ideas; therefore, the areas judged to be important for the student should be given priority.

2. Team members need to be conscious of how they provide feedback to each other, and particularly to the referring teacher. The use of "I statements" treated as a hypothesis to be confirmed or disconfirmed by the teacher is a helpful strategy to reduce defensiveness:
    - We encourage individuals to describe the context before giving feedback. For example, the statement, "When I was watching James during reading last Tuesday," describes the context in which data were collected. It illustrates that observational data are "snapshots" only—or a subsample of the student's instructional experience.
    - Second, we encourage team members to present a hypothesis to address teacher concerns. The statement should be tentative and should focus on the student. These suggestions are illustrated by this statement: "I was thinking James may need more frequent feedback about the accuracy of his written work to stay on task."
    - Third, it is important for team members to elicit validation for their observations from the teacher and other team members. This could be done by saying, for example, "Is this your experience with James?" and "Do others believe this might help James?"

The adults' role is to create a plan that will help the student make more appropriate responses in the classroom—or to move the student from problematic behavior to desired behavior as described by the teacher. It is highly probable that the educators on the team will have different perceptions. These perceptions may be apparent through discrepancies in ratings between the examiner and referring teacher. This is not a problem. Examiners have a "snapshot" of the student's instructional experience, while teachers have a broader picture because of their daily contact over weeks with the student. It is important to discuss divergent perceptions, and to share much information with each other. This process enables team members to analyze the student's instructional needs in the context of the classroom in a thorough way.

■ Step 3

Arriving at Consensus

It is important for team members to arrive at consensus about the student's instructional needs. Team members are encouraged to list all instructional needs and then prioritize the needs in terms of immediacy for intervention. We believe the referring teacher will be most helpful in achieving this task. Furthermore, if the teacher believes the student's needs are going to be met, he or she will be more committed to implementing and/or assisting with the designed intervention.

Step 4

Describing Home Support for Learning

If the student's parents are interviewed, it is possible to list the ways the student's learning is or is not supported at home. Five components on the Home Support for Learning Form (Expectations and Attributions, Discipline Orientation, Home Affective Environment, Parent Participation, and Structure for Learning) have been rated as present or not present. Team members discuss the ways it would be helpful to address the referral concern if parents were involved. In some cases, team members may decide parents' involvement would not assist the concern expressed by the teacher (Step 1). In other cases, it may be decided that the parents and teachers need to work together. Or, it may be decided that only a home support for learning intervention is necessary. If the Home Support for Learning Form was not completed, this step is omitted altogether.

Step 5

Identifying Ways to Involve Parents

Two things are discussed and decided by the educators. First, team members review the ways the parents say they can be involved with their child's schoolwork (see Home Support for Learning Form or Parent Interview Record). Second, team members discuss how to best approach the parents and request their assistance. As indicated at the end of Chapter 5, Correlates of Academic Achievement, and in the section Prerequisites for Using *TIES-II* Effectively in Chapter 2, Methodology, educators will create more effective home-school relationships if: (1) they are prepared about how they want to intervene in the school setting (so they can describe the concern and proposed intervention to parents); and (2) they request parental assistance by inviting parents to help. The following statement is helpful: "We want to help your child learn by using ____________. We believe this will improve your child's performance. However, we believe your child might learn this faster if you could assist us." It has been shown that parents are more eager to be involved with schools if their involvement is related to their child's achievement (Rich, 1987). If parents are not going to be involved and the Home Support for Learning Form was not completed, omit Step 5.

Step 6

Brainstorming Ideas/Options

The purpose of this step is to list all ideas about interventions or services needed for the student. Parents may or may not be involved at this stage. One team member may meet with parents at a subsequent time. We believe it is ideal for parents to be present if possible, and if home support for learning will be a part of the intervention plan. All ideas should be listed, and no evaluation of the ideas should occur during the brainstorming process, which should last about 10 to 15 minutes.

Step 7

Selecting an Intervention

After the brainstorming is finished, it is important to discuss the pros and cons of suggested interventions and services. As is characteristic of consultation, the individual responsible for implementation (often the referring teacher) selects the intervention to be tried. Many times the intervention selected is a combination of ideas listed during Step 6. An intervention must have face validity to be selected; that is, the team must believe there is a good probability that the intervention plan will help the teacher's referral concern. If the teacher is committed to the overall plan, the probability of implementing the plan will be higher. If the intervention is implemented as planned, or with treatment integrity, one can say the assessment data has treatment validity or that the assessment data will lead to treatment effectiveness.

■ Step 8

Sharing Resources

We do not believe that interventions fall only on the shoulders of classroom teachers. Rather, we believe that many individuals can and should contribute to the implementation of interventions. On the Intervention Planning Form, seven categories of people who could be involved in the intervention design are listed. Teachers need to feel supported in intervention implementation. They cannot be asked to carry out all interventions, or all aspects of an intervention.

Resources for specific interventions are provided in Appendix E. Many of these interventions depend on the involvement of more than one individual. It is important to list the roles and responsibilities of those involved in the intervention on the Intervention Planning Form.

■ Step 9

Addressing Other Questions

Many times in an intervention planning session, additional information about the student is raised. This information may vary in the degree to which it is important for intervention planning. This information almost always lengthens the discussion about the student, often to the point that an intervention is not planned. In this case, the team has spent a lot of time engaging in what we refer to as "admiring the problem." To circumvent this situation, we encourage team members to record other information/questions in this section, and to address them at a subsequent meeting. It could be the responsibility of specific team members to gather information about these concerns.

EXAMPLE

The school psychologist may take on this task and meet with the teacher or a team member at a subsequent time. It is essential that an intervention be planned for the student at the collaborative planning session. The teacher is making a request, and this request must be addressed in an expedient manner. Therefore, this step in the planning process helps team members to stay focused on addressing the teacher's concern.

Intervention Documentation

The last sheet of the Intervention Planning and Record Form is a chart to record the student's instructional needs, the instructional actions taken to address those needs, and evaluation of the interventions tried. We believe the best way to evaluate the success of an intervention is to determine whether the discrepancy between the actual and desired levels of student performance as articulated by the teacher (Step 1) have been closed or reduced. Team members are encouraged to collect data to determine whether the intervention has been effective. Various data collection methods may be used (e.g., work samples, multiple baseline designs). Objective evidence to determine intervention success is preferred over subjective evaluation by educators.

We encourage support staff (e.g., consulting teachers, school psychologists) to maintain an ongoing relationship with the referring teacher and to follow up with the teacher about the success of the intervention plan. These individuals should be available for consultation with the referring teacher, particularly about modifications of the plan. Modifications of interventions should be documented. This chart could be shared with the child's receiving teacher for the next school year, and serves as an accountability measure for support staff.

Summary

The collaborative intervention planning process uses a problem-solving sequence to discuss instructional information about a student. Users of *TIES-II* need to use the principles of collaborative consultation and effective teaming strategies described in the consultation literature. References appear in Appendix E.

TIES-II is a system. We've attempted to organize much information about students' learning environments. We organized the information into 12 instructional environment components and five home support for learning components. These 17 components provide a common, shared language for educators to use in designing interventions to address a teacher's concern about an individual student. It is this systematic use of information in relation to the student that makes *TIES-II* different from other interview or observation approaches.

Users of *TIES-II* must make decisions when using this system. You are the experts. You need to decide whether parents should be a part of the process. The intervention planning process is collaborative—among educators and between educators and parents. When you use the *TIES-II* system, you alter (manipulate) the student's learning environment (school and home) to enhance student performance. You also support teachers, the individuals who interact daily with students and who want each student to learn and make progress.

Section 2

RESEARCH

4

SYSTEM DEVELOPMENT AND TECHNICAL CONSIDERATIONS

In this chapter we describe the steps we undertook to develop the system. We describe areas of the professional literature reviewed, item selection procedures, and changes made to *TIES*. We then describe technical considerations regarding *TIES-II*.

System Development

■ Literature Review

Literature on predictors of positive academic outcomes for students was reviewed. We reviewed literature on school effectiveness, teacher effectiveness, instructional effectiveness, school reform, academic outcomes, student cognitions, teacher decision making, models of school learning, and instructional psychology. We read for purposes of identifying those factors individuals say or have shown are important correlates of student achievement and outcomes. Most of the literature reviewed involved regular education students. However, some studies involved low-achieving students and, to a lesser degree, students with disabilities. Most of the studies were correlational in nature, though several large-scale experimental investigations were reviewed. Much of our literature review is summarized in Chapter 5 of this manual, Correlates of Academic Achievement.

After conducting the comprehensive literature review, factors found to be correlated with positive academic outcomes were listed. Over 150 factors (e.g., prerequisite mastery of content, kind of feedback provided) were identified. However, some factors explained no more than 5% of the variance in achievement for students. And, because no assessment system can account for all the factors influencing academic outcomes for a student, it was decided that factors would be selected for potential inclusion in *TIES*: (1) that were repeatedly mentioned in the literature as important for improving academic progress and outcomes, (2) that were easily observable, or (3) for which there was empirical demonstration of effectiveness in model teaching programs.

TIES and *TIES-II* include the same instructional components. We updated the literature review when we revised the system. We then reviewed the literature on home/family correlates of academic outcomes and added five categories of home factors to the system.

■ Item Selection

In development of *TIES* (Ysseldyke & Christenson, 1986) we first compiled a list of more than 200 descriptive statements about the kinds of instruction present for a student. The list was too long and laborious to be used in making observations and judgments about what was happening instructionally to individual students. We used the long scale of more than 200 items in school settings and then omitted, combined, or reworded items. We eliminated redundant items, items requiring excessive interviewing, and situationally-based or content-unique items. On the basis of pilot studies, the initial version of the scale was reduced from 200 to 107 to 81 to 45 to the final 40 selected items.

After the 40 items were selected, they were categorized into 22 categories based on a theoretical framework derived from a review of the literature on effective instruction. As the list of items was being finalized, several formats, including checklists, rating scales, narrative recording, and frequency counts, were tried. In addition, different Likert-type scales (agree to disagree, present/absent) were tried. As the different formats and items were used, the choice became clear. Either the scale must be a long list of discrete behavioral descriptions about classroom instruction, or it must represent the **essential** components of instruction. We chose to identify the essential components of instruction.

The 22-component scale was used in school settings, and it was determined that redundancy existed. The 22 component scale was reduced to a 12-component scale, which was also used in school settings. It was more convenient to use; rating 12 components by taking specifically delineated factors into account resulted in a descriptive picture of the student's instructional environment that was most representative of the complex nature of classrooms.

■ Changes in *TIES-II*

To develop *TIES-II* we took a number of actions:

- We kept the same instructional components as were present in *TIES*, although we updated the theoretical and empirical basis for using those components. We renamed the Instructional Planning component Instructional Match.
- We added the five home support for learning components.
- We used a component scale for the home factors because we wanted consistency in format between instructional and home contexts. We compiled a list of 145 descriptive statements about home influences on student learning, then reduced the list. Also, initially we had ten home support for learning components. It was decided that redundancy existed, and that five components gave the educator a comprehensive picture about home influences that could be potential targets for intervention.
- We tried several formats, including checklists and rating scales to gather the information from parents. Because some of the formats created defensiveness or seemed to generate a socially desirable response from parents, we chose a more global checklist to gather information from parents. We used the same rating approach except that users judge only the presence of each home component.
- We changed the format of the scale from a numerical rating to a SA-SD (Strongly Agree-Strongly Disagree) format. Our experience in using *TIES* and in observing the use of *TIES* indicated that raters and teachers were relying too much on numerical ratings, which implied that the purpose of *TIES* was teacher evaluation. We were interested in finding a way to organize interview and classroom observation data in a nonjudgmental way, a way that would allow educators to collaboratively plan an intervention. Therefore, we chose for collaborative team members to rate the extent to which a component was present and important for an individual student.

Technical Considerations

TIES-II is not a norm-referenced test or scale, but a set of tools to be used in a systematic way to gather descriptive information on the nature of a student's instructional environment. The tools are used to gather data on the 12 components of effective instruction and the five home components that we describe in general in Chapter 5, Correlates of Academic Achievement, and more specifically in Chapter 2, Methodology. The primary technical concern is one of content validity: Is this system measuring what we claim it measures?

■ Interrater Reliability

Interrater reliability for *TIES* was calculated by computing intraclass correlations using the procedure outlined by Shrout and Fleiss (1979). Twenty-eight observers watched tapes of each of two teachers instructing a small group of elementary-age students. They completed the Observation Record and were given copies of the completed Teacher and Student Interview Records. They completed the scale on the basis of observations and interview data. We computed the intraclass correlations.

The specific method of intraclass correlation used was a one-way analysis of variance with random effects. The intraclass correlation was estimated by:

$$\text{1CC}\,(1,1) = \frac{\text{MS Tapes} - \text{MS Residual}}{\text{MS Tapes} + (K-1)\ \text{MS Residual}}$$

where K was the number of judges (28) rating each target student. The obtained reliability coefficients for each *TIES* component are listed in Table 4-1[*]. All interrater reliabilities exceeded .80; all but two exceeded .90. The reliabilities meet criteria specified for use of a scale in screening and instructional planning (Salvia & Ysseldyke, 1991).

Thurlow, Ysseldyke, and Wotruba (1988) report data on interrater reliability of *TIES*. Interrater agreement was checked as part of a study of observers' ratings of the qualitative nature of instruction for students under different student-teacher ratios. Thirty-three pairs of observers observed the same student for one hour during either reading or math instruction. Both exact agreement and grouped agreement (grouping ratings of 3 and 4 and ratings of 1 and 2) were examined. Interrater agreement on exact ratings was 47.8% and for grouped ratings was 76.2%. Interrater agreements are lower than they should be for making important decisions about individual students. However, they are appropriate for screening purposes. At the same time, the ratings are about as expected because of the complexity of instructional environments.

Table 4-1

Interrater Reliabilities for *TIES* Components

Component	Reliability Coefficient
1–Instructional Presentation	.94
2–Classroom Environment	.94
3–Teacher Expectations	.95
4–Cognitive Emphasis	.83
5–Motivational Strategies	.83
6–Relevant Practice	.92
7–Academic Engaged Time	.96
8–Informed Feedback	.94
9–Adaptive Instruction	.94
10–Progress Evaluation	.95
11–Instructional Planning	.94
12–Student Understanding	.96

■ Validity

Validity refers to the extent to which a device measures what its authors say it measures. It is our task as the authors of this system to accumulate evidence that optimally reflects the value of this scale for its intended purpose (American Educational Research Association, 1985).

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[*] The component titles/numbers listed in Tables 4-1 through 4-7 and Figures 4-1 through 4-3 relate to the first edition of *TIES*. The components have been reorganized in *TIES-II*.

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There are two primary purposes for using *TIES-II*: (1) for describing the student's instructional needs in context, and (2) for planning instructional interventions. The critical kind of validity is content validity. In Chapter 5 we describe in general the components that comprise *TIES-II*, and in Chapter 2 we described those components more specifically. We presented evidence demonstrating that the factors are indeed specifically related to and predictive of instructional outcomes for individual students, and that they are sources of valuable information in planning instructional interventions. There is clear evidence for the content validity of *TIES-II*.

One measure of content validity is the extent to which the instructional components for *TIES* are related to academic achievement. We collected both *TIES* data and achievement data on a sample of 176 students in general education environments, and 215 students in special education environments. Achievement data were collected using the Basic Achievement Skills Individual Screener (Sonnenschein, 1983). Correlations between *TIES* ratings and scores on the subtests of the achievement test are reported in Table 4-2. Correlations in general education environments were moderate.

Variability in Ratings

One of the major concerns we had in developing both *TIES* and *TIES-II* was the extent to which we could identify factors for which there would be sufficient variability in professionals' ratings to warrant the time and effort spent gathering information. If observers consistently rated different instructional environments in the same way, we would have to question the

Table 4-2

Correlations Between Scores on the Basic Achievement Skills Individual Screener (BASIS) and *TIES* Components

INSTRUCTIONAL ENVIRONMENT COMPONENTS

	1	2	3	4
Std Math Score	.29*	.23	.24	.31*
Std Reading Score	.19	.29*	.23	.34**
Std Spelling Score	.19	.18	.17	.35**

	5	6	7	8
Std Math Score	.23*	.47**	.30*	.32*
Std Reading Score	.20	.45**	.22	.23
Std Spelling Score	.24	.38**	.17	.24

	9	10	11	12
Std Math Score	.20	.38**	.30*	.25
Std Reading Score	.11	.30*	.24	.35**
Std Spelling Score	.06	.29*	.24	.34**

* Significance Level = .05
** Significance Level = .01

utility of the system. On the other hand, if there was variability in ratings, then the system would be more useful. We conducted a set of investigations of the variability of ratings on *TIES* components for students with mild disabilities: (1) in regular education (across subject matter areas) (N=62); (2) in mathematics instruction in regular education (N=114); (3) in reading instruction in regular education (N=74); (4) in instruction in special education settings (N=70); and (5) in reading and/or math instruction in special education settings (N=145). In Tables 4-3 through 4-7 we list the percentage of raters who assigned ratings of 1, 2, 3, and 4 to each of the *TIES* components. In general the ratings are high, though there is sufficient variability. For example, professionals rated the nature of the instructional environment across subject matter content areas for 62 students in general education environments. Ratings of 4 (high) were assigned to 32.3% of the students' instructional environments, ratings of 3 were assigned to 41.9% of the instructional environments, ratings of 2 were assigned in 14.5% of the cases, while ratings of 1 were assigned to 11.3% of the instructional environments. Observers did see instructional environments that were not at all appropriate, but they did not see these often.

There are some interesting data in the tables on frequency of ratings. Note for example that the instructional component rated most often as missing or inappropriate was *TIES* Component 4, Cognitive Emphasis. For 28.1% of the students in general education math instruction (Table 4-4), 24.3% in general education reading instruction (Table 4-5), and 25% in reading and math instruction in special education settings (Table 4-7), a rating of 1 was assigned. When observations were across subject matter areas in these settings, the ratings were higher. It appears that drill and practice are used extensively for individual students with disabilities during reading and math instruction across instructional settings (both general and special education settings), and more instruction in thinking skills is incorporated in lessons in other content areas.

Table 4-3

Percentage of Specific Ratings of the Instructional Environment for 62 Students With Mild Disabilities in General Education Settings

TIES	Ratings					
Components	1	2	3	4	Mean	SD
1	11.3	14.5	41.9	32.3	2.95	.97
2	4.8	16.1	11.3	67.7	3.42	.93
3	3.2	11.3	33.9	50.0	3.35	.83
4	12.9	14.5	51.6	21.0	2.81	.92
5	9.7	24.2	35.5	30.6	2.87	.97
6	3.2	24.2	30.6	41.9	3.11	.89
7	6.5	19.4	24.2	50.0	3.18	.97
8	10.2	22.0	27.1	40.7	2.98	1.03
9	10.2	25.4	25.4	39.0	2.93	1.03
10	1.7	18.6	37.3	42.4	3.20	.80
11	3.4	20.3	23.7	52.5	3.25	.90
12	3.4	15.3	37.3	42.4	3.24	.86

Table 4-4

Percentage of Ratings of the Instructional Environment for 114 Students With Mild Disabilities During Math Instruction in General Education Settings

TIES Components	Ratings 1	2	3	4	Mean	SD
1	10.5	24.6	39.5	25.4	2.80	.94
2	2.6	23.7	32.5	41.2	3.12	.86
3	1.8	18.4	41.2	38.6	3.17	.79
4	28.1	36.0	27.2	8.8	2.17	.94
5	11.4	41.2	36.8	10.5	2.46	.83
6	1.8	24.6	40.4	33.3	3.05	.81
7	4.4	20.2	35.1	40.4	3.11	.88
8	4.4	23.0	34.5	38.1	3.06	.89
9	10.7	36.6	38.4	14.3	2.56	.87
10	.9	9.9	58.6	30.6	3.19	.64
11	2.7	16.1	53.6	27.7	3.06	.74
12	1.8	17.0	55.4	25.9	3.05	.71

Table 4-5

Percentage of Ratings of the Instructional Environment for 74 Students With Mild Disabilities During Reading Instruction in General Education Settings

TIES Components	Ratings 1	2	3	4	Mean	SD
1	6.8	17.6	45.9	29.7	2.99	.87
2	5.4	12.1	35.1	47.3	3.24	.87
3	1.4	14.9	48.6	35.1	3.18	.73
4	24.3	54.1	20.3	1.4	1.99	.71
5	5.4	44.6	33.8	16.2	2.61	.82
6	–	14.9	59.5	25.7	3.11	.63
7	1.4	18.9	37.8	41.9	3.20	.79
8	2.7	24.3	37.8	35.1	3.05	.84
9	11.0	28.8	41.1	19.2	2.68	.91
10	1.4	18.9	47.3	32.4	3.11	.75
11	2.7	13.5	50.0	33.8	3.15	.75
12	–	16.4	58.9	24.7	3.08	.64

Table 4-6

Percentage of Ratings of the Instructional Environment for 70 Students With Mild Disabilities Across Content Areas in General Education Settings

TIES	Ratings					
Components	1	2	3	4	Mean	SD
1	1.4	4.3	42.9	51.4	3.44	.65
2	1.4	5.7	24.3	68.6	3.06	.67
3	–	8.6	14.3	77.1	3.69	.63
4	7.2	24.6	37.7	30.4	2.91	.92
5	4.3	14.5	44.9	36.2	3.13	.82
6	2.9	14.3	37.1	45.7	3.26	.81
7	–	7.1	27.1	65.7	3.59	.63
8	1.4	4.3	27.5	66.7	3.59	.65
9	–	7.2	18.8	73.9	3.67	.61
10	–	4.3	27.5	68.1	3.64	.57
11	–	8.7	23.2	68.1	3.59	.65
12	1.5	7.4	42.6	84.5	3.38	.69

Table 4-7

Percentage of Ratings of the Instructional Environment for 145 Students With Mild Disabilities During Reading and Math Instruction in Special Education Settings

TIES	Ratings					
Components	1	2	3	4	Mean	SD
1	1.4	17.9	40.7	40.4	3.19	.78
2	.7	11.0	31.7	56.6	3.44	.72
3	.7	11.7	28.3	59.3	3.45	.73
4	25.0	38.2	30.6	6.3	2.18	.88
5	4.2	25.7	39.6	30.6	2.97	.86
6	–	9.1	50.3	40.0	3.30	.64
7	1.4	7.6	26.2	64.8	3.54	.70
8	–	11.7	32.4	55.9	3.44	.70
9	.7	15.3	42.4	41.7	3.25	.73
10	2.1	9.0	37.2	41.7	3.39	.74
11	.7	13.1	40.7	45.5	3.31	.72
12	1.4	9.0	49.3	40.3	3.27	.69

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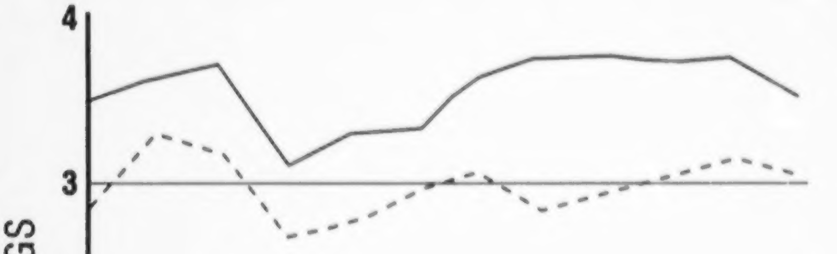
Ratings as a Function of Setting and Instructional Content Area

It is expected that the nature of the instructional environment and the appropriateness of instruction for individual students will differ as a function of setting and content area. We conducted three studies to investigate the extent to which this is true. In the first study we completed *TIES* ratings in general education versus special education settings for 62 students with mild disabilities. Ratings were completed across subject matter content areas. Paired t tests were used (p<.01) to compare mean ratings for each of the 12 *TIES* instructional environment components in the two settings. There were significant differences as a function of setting: Ratings of the appropriateness of the instructional environment were significantly higher in special education settings for all components except Component 2 (Classroom Environment). The ratings are illustrated in Figure 4-1.

Figure 4-1

Mean Ratings for Each of the *TIES* Instructional Environment Components for 62 Students With Mild Disabilities During Their Instructional Time in Regular and Special Education Enviornments



In the second study we contrasted *TIES* ratings for 74 students with mild disabilities during reading and math instruction in general education settings. Paired t tests were used to contrast ratings. We found no significant differences in the nature of instruction as a function of content area. The findings are illustrated in Figure 4-2.

In the third study we contrasted *TIES* ratings for 70 students with mild disabilities in special education during all content areas of instruction with *TIES* ratings for 145 students with mild disabilities in special education settings during reading and/or math instruction only. Ratings were similar across content areas, with two exceptions. Ratings on *TIES* Component 4 (Cognitive Emphasis) and *TIES* Component 9 (Adaptive Instruction) were higher when comparisons were for all subject areas rather than restricted to observations during reading and math only. The findings are illustrated in Figure 4-3.

Figure 4-2

Mean Ratings for Each of the *TIES* Instructional Environment Components During Mainstream Reading and Math Instruction

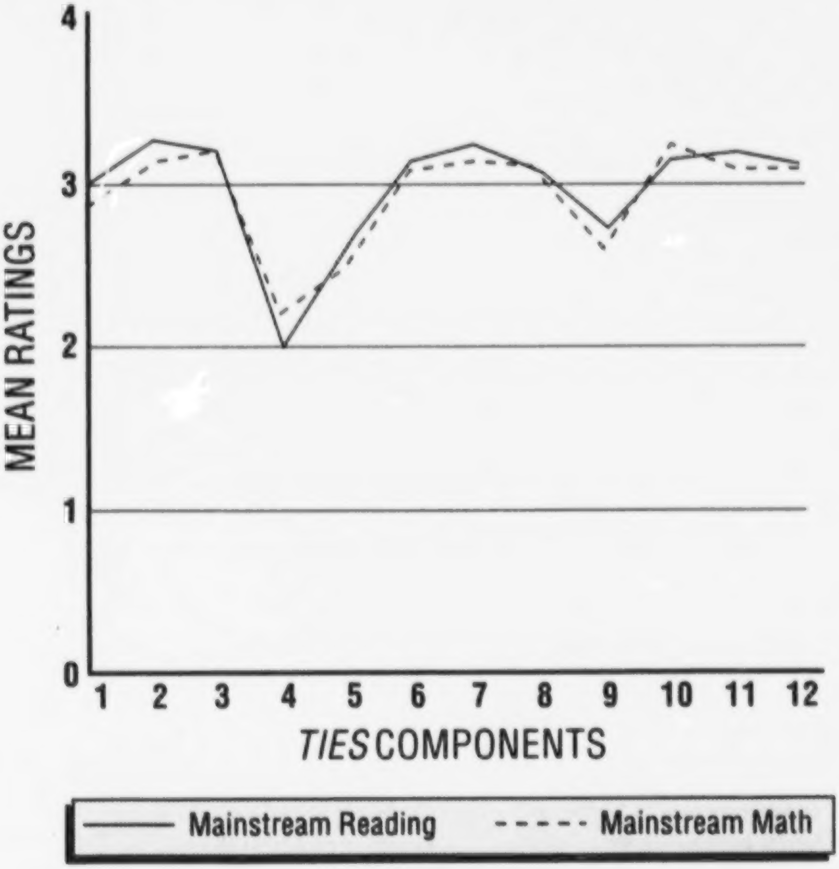
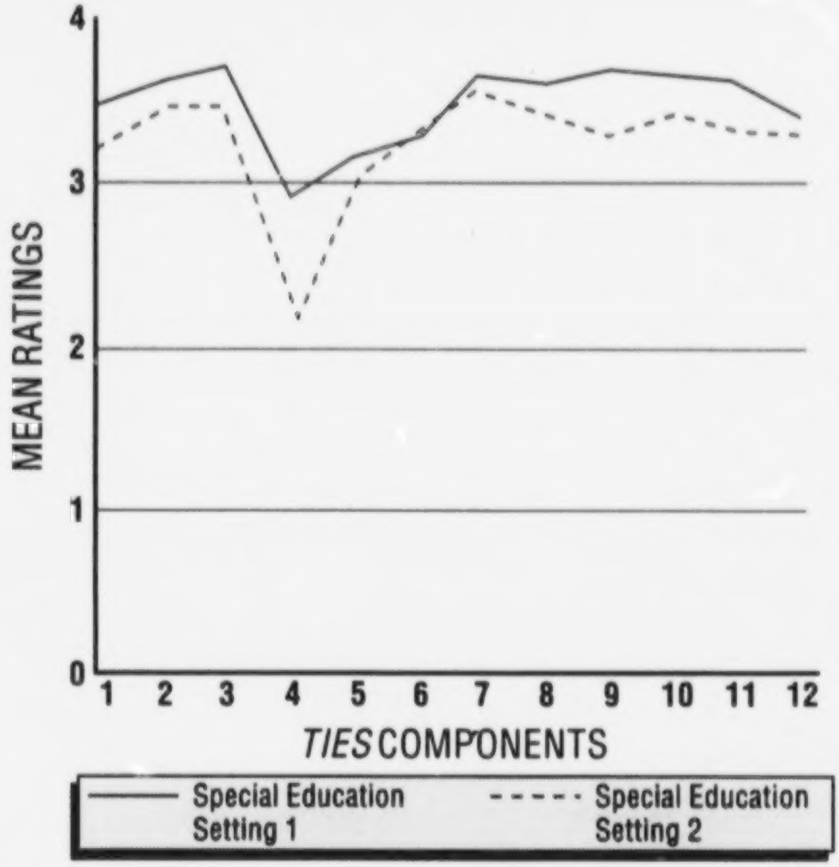


Figure 4-3

Mean *TIES* Ratings in Two Special Education Settings: Setting 1 Across All Content Areas, Setting 2 During Reading and/or Math Only



Gender Differences

We would like to believe that there are no gender differences in professionals' ratings of *TIES* instructional environment components for boys and for girls. However, in research to date we have found some gender differences. We report here our findings from five data sets. In three investigations there were no differences in *TIES* ratings for boys and for girls. When we observed 114 students with mild disabilities in math instruction in general education settings, 74 students with mild disabilities in reading instruction in general education settings, and 70 students with mild disabilities across subject matter content areas in special education settings, there were no differences in ratings of boys and girls. However, in a study of *TIES* ratings for 145 students with mild disabilities in reading and math instruction only in special education environments, girls received significantly higher ratings on *TIES* Component 7 (Academic Engaged Time). Observers indicated that girls were actively engaged in instruction more often than boys.

When we observed 62 students with mild disabilities in general education environments, we found significant differences among genders (p<.01) for *TIES* Components 6 (Relevant Practice), 7 (Academic Engaged Time), 9 (Adaptive Instruction), and 11 (Instructional Planning). In all of these instances, higher ratings were assigned to girls.

Comparisons for Category of Disability

In five separate investigations, we examined the extent to which there were differences in *TIES* ratings for categories of students. Students were elementary age and were identified by their school district as mentally retarded, learning disabled, emotionally disturbed, or nondisabled. Students were observed and *TIES* ratings completed in special education and regular education environments. In both settings, some of the students were observed during reading and/or math instruction only, while others were observed during all academic content areas. The subjects for the study are those whose scores are reported in Tables 4-3 through 4-7. We made 60 comparisons of categories, eight of which were significant.

The significant findings were similar. In special education settings, instruction was rated as more appropriate for LD and ED students than for MR students on *TIES* Components 2 (Classroom Environment), 3 (Teacher Expectations), 5 (Motivational Strategies), and 12 (Student Understanding). In general education settings, when we observed across all subject matter areas, instruction was viewed as more appropriate for LD than for nondisabled students on *TIES* Components 4 (Cognitive Emphasis), 5 (Motivational Strategies), 6 (Relevant Practice), and 10 (Progress Evaluation). We do not put much stock in the obtained differences, given we found significant differences in only eight of 60 comparisons.

5

CORRELATES OF ACADEMIC ACHIEVEMENT

In this section, correlates of academic achievement are reviewed. The total learning environment for a student consists of the events, interactions, and influences in the classroom and home environments. Fantini (1983) aptly described an educative environment in terms of home, community, and school influences. The purposes of this review are to integrate the information for diagnosticians in one document, and to provide content validity for *TIES-II* components. Although the review is comprehensive, diagnosticians are encouraged to read the original studies. Instructional correlates of academic achievement are reviewed, followed by home factors related to achievement.

Instructional Effectiveness Literature

Most research on effective instruction has been conducted with regular education students, is correlational in nature, reports the results of group studies, and uses basic skills achievement as the central outcome measure for judging instructional effectiveness. While those who have conducted research on instructional effectiveness have not identified exactly what is necessary and effective for students, they have provided a knowledge base that diagnosticians need to use when thinking about learning problems and designing interventions for individual students.

Important dimensions of classroom instructional environments have been shown to be related to student learning outcomes, and these are reviewed. The more users of *TIES-II* know about the instructional effectiveness literature, the more helpful the system will be in identifying ways to improve the performance of individual students. Effective instruction factors, characteristics of effective teaching programs, correlates of positive instructional outcomes for students who are disabled and nondisabled, and categorical comparisons of students' instructional environments are described.

■ Effective Instruction Factors

Several researchers have attempted to produce descriptions or lists of factors that characterize effective instruction. The descriptions are of two kinds:

- Characteristics of effective instruction without regard to content area (Stevens & Rosenshine, 1981; Reith & Evertson, 1988), and

- Characteristics of effective instruction in basic skills areas (reading, math, etc.) (Blair, 1984; Englert, 1984; Good & Brophy, 1984; Guzzetti & Marzano, 1984).

These descriptions, for the most part, have been based on integrations of many research findings.

General Instruction

Based on a synthesis of findings from 20 correlational or experimental studies examining instructional outcomes for low SES elementary students in regular classroom settings, Stevens and Rosenshine (1981) suggested that effective instruction is characterized by teacher demonstration of the skill or presentation of the rule or general principle, student practice of each of the component parts of the skill with the teacher providing prompts and corrections, and independent student practice with teacher monitoring for frequency of correct responses. Instruction is teacher-directed, academically focused, and individualized so each student succeeds, and allows each student to achieve a high percentage of correct responses. While "implications for special education settings are somewhat conjectural" (p. 1), Stevens and Rosenshine indicate that these characteristics are applicable to teaching basic academic skills to students who are disabled.

In subsequent integrative reviews (Rosenshine, 1983; Rosenshine & Stevens, 1986) effective instruction for all students was characterized by six instructional **functions**:

1. Daily review, including checking the previous day's work and reteaching if necessary;
2. Presentation of new content and skills;
3. Initial student practice characterized by much teacher-student interaction and a student success rate of 80% or higher;
4. Feedback and correctives to ensure student success;
5. Independent practice so that student responses become firm and automatic; and
6. Weekly and monthly reviews, reteaching concepts and skills if necessary.

According to Rosenshine (1983), to the extent that students are younger, slower, and/or have little prior background knowledge:

- Instruction is more effective if learning is structured;
- There is a brisk pace, but instruction proceeds in small, sequential steps;
- Detailed and redundant explanations and instructions are given;
- Many concrete examples are provided;
- Many questions are asked;
- Opportunities for overt, active student practice are provided;
- Feedback and corrections are provided (particularly in the initial stages of learning new material);
- Students' success rate of 80% or higher on initial learning tasks is assured;
- Seatwork assignments are divided into smaller assignments with increased teacher monitoring;
- Student practice is continued to the point of rapid, automatic responses (90-100% success rate); and
- Overlearning of skills is emphasized.

Basic Skills Instruction

Guzzetti and Marzano (1984) and Blair (1984) identified instructional factors related specifically to reading achievement of elementary school students. Reading achievement of students was higher when there was:

- Sufficient opportunity to learn, efficient use of instructional time, and high rates of student academic engagement;
- Use of direct instruction (Rosenshine, 1976), especially a high degree of teacher-student interaction rather than reliance on materials, media, or learning situations;
- Placement of students at the appropriate instructional level paired with clearly stated and specific goals for those students;
- Use of varied and flexible grouping practices;

- Emphasis on transfer of skills through varied, sufficient, and meaningful practice; and
- Careful monitoring of student progress.

In addition, teachers' beliefs about teaching reading were correlated positively with reading achievement for elementary school students. Specifically, high achieving readers had teachers who held positive expectations for student performance, and were dissatisfied with status quo instructional practices.

Good and Brophy (1984) reviewed several correlational and experimental studies examining student learning gains in basic skills in reading and mathematics for elementary school students. They identified several factors associated with better performance:

1. High sense of teacher efficacy,
2. Student opportunity to learn,
3. Active teaching,
4. High student engagement,
5. Rapid progress through the curriculum,
6. Insurance of mastery, and
7. A well-organized, academically focused, pleasant learning environment.

In the early grades, successful teachers interact frequently with students on a one-to-one basis (often within small group settings) and provide frequent opportunities for overt practice with feedback. In the upper elementary grades, successful teachers rely more on whole-class settings for introducing new material, using small groups primarily for remedial activities. Although students work cooperatively or independently for longer periods in the upper grades, teachers continue to monitor progress and provide necessary assistance and feedback. Rosenshine (1976, 1986) has referred to these global characteristics of effective instruction as direct instruction (small "d") or explicit teaching. The efficacy of the approach has been identified as almost universal (Behling, 1986), and has been demonstrated specifically with low-income, disadvantaged students and recently with special education students (Englert, 1984; Gersten, 1985; Leinhardt, Zigmond, & Cooley, 1981; Reith & Frick, 1982; Rosenshine, 1977, 1979).

CASE STUDY

Englert (1984) found that for learning disabled and educable mentally disabled students, effective teachers were those who:

- **Maintained a quicker instructional pace;**
- **Elicited more correct responses;**
- **Used prompts more often to encourage correct answers, and maintained student accuracy above 80%; and**
- **Used lesson objectives, concrete examples, and error drill more frequently.**

Critics argue that direct instruction or explicit teaching approaches stress rote learning rather than conceptual learning. Based on a comprehensive review of direct vs. nondirect instructional models, Peterson (1979) concluded that direct instructional methods produce greater achievement gains, whereas open classrooms (indirect approach) promote more creativity and problem solving. Citing the work of Simon (1973), Rosenshine (1986) argues that direct instruction methods are "applicable to any 'well structured' discipline where the objective is to teach performance skills or mastery of a body of knowledge" (p. 60). In contrast, the methods are less effective for other important, but less structured, teaching areas, such as written composition, reading comprehension, and literature analysis.

Characteristics of Effective Teaching Programs

A number of programs have been identified as ones that reflect effective teaching approaches. Six of these are reviewed briefly here:

1. Direct Instruction,
2. Mastery Learning,
3. Active Teaching Model,
4. Texas First Grade Reading Group Study,
5. Exemplary Center for Reading Instruction (ECRI), and
6. Cooperative Learning.

These descriptions are followed by a brief discussion of some common elements of effective teaching programs.

Direct Instruction

"Direct Instruction," with capital letters, refers to a carefully sequenced curriculum and comprehensive system of instruction developed by Engelmann and colleagues (Becker, Engelmann, Carnine, & Rhine, 1981), implemented in Project Follow Through, and published as Distar materials. Cited by Pearson and Tierney (1983), Direct Instruction researchers (e.g., Becker et al., 1981) use four key principles in creating instructional programs:

1. Teach the general case by specifying relevant and irrelevant examples of concepts;
2. Keep errors to a minimum by carefully analyzing and sequencing tasks;
3. Teach the essentials, because the number of examples needed to learn a concept is less; and
4. Provide practice on the basis of the learning rate of the student.

Direct Instruction materials:

1. Are designed in a clear, unambiguous way;
2. Teach an explicit step-by-step strategy;
3. Develop mastery at each step;
4. Develop corrections for student errors;
5. Gradually fade from teacher-directed to independent work;
6. Emphasize systematic practice; and
7. Use cumulative, frequent review.

The effectiveness of the Direct Instruction program for students is well-documented (Gersten, Woodward, & Darch, 1986), including low-income students and students with IQs of 71 to 90. The success of these procedures with students who are disabled has been attributed to the requirement that students master content at a 95% accuracy rate before proceeding to the next lesson. Beneficial effects were found for math, language, spelling, and reading achievement.

Mastery Learning

Bloom (1976) transformed Carroll's (1963) conceptual model of school learning into an instructional paradigm called **mastery learning**. Mastery learning is characterized by:

1. Accurate assessment of students' prior knowledge and skill level;
2. The specification of objectives and content of instruction to inform both the teacher and students about expectations;
3. Breaking instruction into smaller units and explaining and ordering the task in an optimal way for students;
4. Provision of appropriate cues, active student participation, and use of frequent, explicit feedback and correctives; and
5. Setting standards of mastery or predetermined outcomes.

Mastery standards must be set in a way that avoids interstudent competition (Bloom, 1976); students must believe they are being judged in terms of level of performance rather than against a normal curve or set of arbitrary standards. It is accepted that some students may need more concrete explanations, examples, or demonstrations than others; some students may need more approval and reinforcement than others; some students may need several repetitions of the lesson presentation while others may understand it the first time. Bloom (1985) considers quality of instruction in terms of its effects on individual learners rather than on random groups of learners.

The mastery learning model has been the subject of much research and discussion (e.g., see Learning Styles, 1974) and has been used extensively in two cities: Chicago (Katims, 1979; Levine & Stark, 1982) and Denver (Barber, 1979). In general, it has been shown that mastery program students show a significant increase in achievement over nonprogram students. Anderson (1984a) reported that the clearest difference between mastery learning and nonmastery learning classes was in the communication of expectations and the provision of feedback and correction. Applying meta-analytic techniques, Burns (1979) found both group-based and individual-based mastery approaches to be more effective than nonmastery; group-based approaches tended to be more effective than individual-based approaches. Despite evidence for increased time on task and achievement with the use of mastery learning principles, critics (e.g., Arlin & Webster, 1983; Buss, 1976; Resnick, 1977) argue that achievement gains are offset by increased time demands and that fragmented knowledge and skills (rather than higher order evaluative thinking) result when content is broken into small units of learning.

Active Teaching Model

The instructional functions that have been described by Rosenshine (1983) are incorporated into the Active Teaching Model designed by Good and Grouws (1979). Its main components include review, lesson development, controlled practice, checking seatwork, and integrated, relevant homework assignments.

CASE STUDY

During a four-month experimental comparison in mathematics, teachers trained in the Active Teaching Model:

- Reviewed and re-explained the previous day's lesson;
- Checked and graded homework;
- Provided practice on mental computation problems; and
- Actively engaged students during seatwork.

No significant differences were found between experimental and control groups in frequency of some teacher behaviors (summarizing the previous day's materials, spending at least five minutes on lesson development and explanation, and using demonstrations during lesson presentation). However, teachers implementing the Active Teaching Model produced greater student learning gains, as measured by the SRA Mathematics Achievement Test, than control teachers (31% vs. 19%). Moderate but significant correlates with student math achievement included conducting a review (r = .37), checking homework (r = .54), working on mental computation (r = .48), holding students accountable for seatwork (r = .35), and giving homework assignments (r = .49). Four of the five instructional behaviors positively related to student achievement were those that trained teachers had used with a higher frequency than control teachers.

Texas First Grade Reading Group Study

Anderson, Evertson, and Brophy (1979) developed effective instruction principles for small group instruction in beginning reading. They trained classroom teachers in specific ways to organize the instructional group, program for continuous progress, introduce lessons and activities, respond to students' answers, and check for student understanding.

CASE STUDY

Teachers were trained to provide cues and prompts to incorrect or "don't know" student responses; the goal was to lead the student to the accurate response.

The major result of the Texas First Grade Reading Group Study was that the experimental group had significantly higher reading achievement gains than the control group.

Anderson et al. noted that their data suggest that students achieve more when:

1. They are given greater opportunities to learn;
2. They are given opportunities to practice skills correctly;
3. Teachers provide explicit information about the structure of skills, rather than focusing only on memorizing rules or labels; and
4. Classrooms are well-managed.

Exemplary Center For Reading Instruction (ECRI)

Based on the contention that the teacher has a greater effect on student achievement than does materials (Samuels, 1982), reading techniques developed by the Exemplary Center for Reading Instruction (ECRI) emphasize the importance of a brisk teaching pace and specific error correction procedures. The defining characteristic of ECRI is the use of specific techniques for eliciting student overt responses, particularly accurate responses:

- First, specific cues/prompts and carefully sequenced questions are used during the instructional presentation to increase the accuracy of the student's response while maintaining a brisk instructional pace.
- Second, specific correction procedures are used following student errors. Students are led to the correct answer (sustaining feedback), retaught (process feedback), and given opportunities to answer correctly several times before terminating the lesson. Terminal feedback, in which the student is provided an answer by the teacher or another student, is not used.

The positive benefits of ECRI teaching strategies are well-documented (Reid, 1981, 1986). Studies assessing the effectiveness of ECRI teaching procedures found that student learning increases when:

1. Students are provided with increased amounts of quality instructional time;
2. Teachers positively reinforce their students for increasing oral speed and accuracy;
3. Students' overt, accurate, and rapid responses are increased;
4. Teachers provide much supervised practice and require high levels of mastery;
5. Teachers check student responses and provide cues more frequently;
6. Language activities are integrated with reading; and
7. Instruction follows a demonstrate-prompt-practice sequence.

In general, students placed in ECRI classrooms make twice the reading gain of students taught by traditional, basal-oriented methods, which rely heavily on students working exercises and completing reading passages from textbooks and workbooks. Commercially prepared materials are often poorly designed and written, resulting in students having difficulty learning the content because of text confusions, not because of the basic skill being mastered (Doyle, 1983). The role of the teacher is essential to the effectiveness of ECRI procedures.

Although the strong data base for use of ECRI procedures primarily involves regular education students, recent data suggest that ECRI is effective with compensatory and special education students as well.

CASE STUDY

After seven months of ECRI instruction, disabled and nondisabled students attending ECRI's Reading Clinic scored higher on the reading subtests of the California Achievement Test (Tiegs & Clark, 1977). The gains for:

- Oral reading (X = 2.6 years, range: 1.2 - 6.4 years);
- Comprehension (X = 2.4 years, range: 1.2 - 5.2 years); and
- Vocabulary (X = 2.6 years, range: 1.1 - 7.7 years) are impressive.

In addition, students receiving ECRI instruction made twice the achievement gain as they did when receiving Chapter I instruction.

Cooperative Learning

Cooperative learning (Johnson & Johnson, 1986) is characterized by positive interdependence, individual accountability, collaboration, and group processing. When students with disabilities are mainstreamed and cooperative learning strategies are implemented, positive relationships between elementary-age students with and without disabilities result. Compared to competitive and individualistic learning experiences, cooperative learning results in higher levels of self-esteem, greater achievement, more intrinsic motivation, and increased perspective taking among students. Finally, students have been found to achieve more in cooperative than in competitive or individualistic learning structures. A meta-analysis conducted by Johnson, Maruyama, Johnson, Nelson, and Skon (1981) and reported by Johnson and Johnson (1986) indicated the superiority of cooperative learning situations for promoting positive academic outcomes for students regardless of age, ability, subject area or learning task. Research shows that students achieve more when they help each other during independent seatwork (Slavin, 1980). Some of the advantages attributed to cooperative learning settings presumably come from students having to explain the process or answer (Webb, 1982).

Common Elements of Effective Teaching Programs

Teaching approaches that produce relatively greater increases in student achievement are characterized by two factors: structure and interaction. The instructional structure is teacher-directed, academically focused, and follows a demonstrate-prompt-practice-prove instructional sequence. Clear lesson explanations, supervised guided practice, sufficient independent practice (classroom and homework), and evaluation of student performance are provided. Monitoring occurs at all points throughout the instructional sequence.

A high degree of teacher-student interaction is maintained by teacher questioning and student responding patterns, and by providing students with informative feedback. Students are provided many opportunities to respond; cues and prompts are provided to increase accuracy of responses. Students work toward mastery of skills. Highly structured, interactive instruction has resulted in greater achievement gains and active participation (academic engaged time) for students.

■ CORRELATES OF ACADEMIC ACHIEVEMENT

It is difficult to organize and synthesize the instructional effectiveness literature because even a cursory reading of the literature produces a long "laundry list" of factors related to student achievement. We have identified eight major correlates of academic achievement, and in this section we review research findings for each correlate. Time research findings are reviewed first, followed by discussions of seven additional factors indicative of instructional quality: instructional match, teacher expectations, lesson presentation, assigned tasks, practice, classroom management, and opportunity to learn.

Time

Educational psychologists have paid considerable attention to the relationship between time and school learning (e.g., Denham & Lieberman, 1980; Greenwood, 1991; Harnischfeger & Wiley, 1976, 1985; Wiley & Harnischfeger, 1974). Several comprehensive reviews of time research findings and issues have been written (Anderson, 1984a; Graden, Thurlow, & Ysseldyke, 1982; Karweit, 1983). In general, researchers have demonstrated:

1. School and teacher differences in time allocated to instruction exist; when aggregated over the school year, large differences between schools and classrooms in the opportunity to learn in various curriculum areas result;
2. Students spend a relatively small percentage of the school day engaged in academics;
3. The percentage of time engaged varies considerably across classrooms and across individual students within classrooms, resulting in large differences between students in time involved in learning;
4. Engaged time rates depend on a variety of organizational factors (classroom management, class size, interruptions),

content area, and the point in time during the instructional period; and
5. Engaged time is consistently though moderately related to student achievement.

In addition to the tremendous variation in use of classroom time, data suggest that additional time used to make up for ineffective instruction is negatively correlated with achievement (Fredrick & Walberg, 1980; Karweit, 1983).

The Beginning Teacher Evaluation Study (BTES) was one of the largest observation studies investigating the use of time in elementary schools and among the first in which classroom conditions and teaching activities that promote student achievement were identified (Fisher, Berliner, Filby, Marliave, Cahen, & Dishaw, 1980).

CASE STUDY

BTES research involved classroom observations over a 21-week period of 139 students from second grade and 122 students from fifth grade in reading and math classes. Observers collected data on several dimensions for individual students, including:

- Content of instruction,
- Allocated time,
- Setting,
- Student behavior (engagement and success level), and
- Instructional behavior provided.

Students with higher reading and math achievement had high rates of academic learning time.

Academic Learning Time (ALT), a measure of observed student classroom learning, is the time spent by a student engaged in an academically relevant task with a high rate of success. Instructional behaviors correlated with ALT include:

1. Accurate diagnosis of student skill level;
2. Appropriate prescription of learning tasks;
3. Substantive teacher-student interaction (e.g., active teacher monitoring and explicit academic feedback);
4. Clear, repetitive directions about task demands and information on the lesson structure;
5. An academic focus in the classroom; and
6. Cooperation, student responsibility for academic work, and good behavioral control in the learning environment.

The nature of the tasks on which students spend time is as important as the act of engagement itself. Thus, BTES research broadens the concept of engaged time (time on task) by using student success rate as an indication of task appropriateness (Marliave & Filby, 1985).

High rates of academic engaged time have consistently been identified as a component of effective instruction (e.g., Anderson, 1984a; Fisher & Berliner, 1985; Good, 1983; Karweit, 1983, 1985). Anderson (1984b) argues that effective instructional practices increase student engaged time, which in turn increases student achievement. Key instructional variables that promote academic engaged time have been identified by several individuals. Cobb (1972) indicated that time on task and achievement were increased by reinforcing four "survival skills":

1. Attending (paying attention to the instruction),
2. Work (engaging in task completion behaviors),
3. Volunteering (indicating a willingness to participate), and
4. Compliance (doing what the teacher asks to be done).

Key instructional variables for increasing time on task that emerged from the findings of the BTES (Denham & Lieberman, 1980) are active monitoring (for both task completion and accuracy of response) and task appropriateness. Critical instructional elements for increasing academic engaged time, identified from the Follow Through study (Stallings, 1975), include clear teaching goals, structured tasks, sufficient time allocated to academic instruction, continuous and active instruction, high success rates, immediate, academically orientated feedback, and reinforcement and praise.

The relationship between instructional behaviors and high rates of academic engagement varies according to behavioral setting, teaching methods, student characteristics, and teaching practices. Anderson (1984a) reviewed Kounin and Gump's (1974) findings that time on task is lower in whole class recitations than in small teacher-led groups, and lower for student-paced activities (i.e., self-paced) than for teacher-paced (i.e., externally paced) activities. In addition, variety is associated with a high level of time on task in seatwork settings, but not in recitation settings. Classrooms with lower amounts of academic engaged time have been characterized by a variety of activities occurring simultaneously or by the majority of students working alone.

Similarly, Anderson and Scott (1978; reported by Anderson, 1984a) found that different teaching methods were differentially useful for different types of students (e.g., one-way communication methods were associated with higher levels of time on task for students with higher abilities; methods that place responsibility on the student for use of time were associated with high levels of time on task for students with positive academic self-concepts).

Time-based research is criticized on several counts:

- First, it is said that it tends to draw attention away from the quality of learning, and toward the quantity of time spent learning. Confrey (1981) argues that what occurs during a time period, not simply accumulation of time, is most critical for student learning. Thus, assignment of "busywork" can result in high time on task rates for students without concomitant increases in learning.
- Second, Karweit (1985) concluded that there is a consistent, but low, positive correlation (r = .09 to .43) between the two when initial ability is controlled. Thus, time and other variables share substantial common variance.
- Third, Anderson (1984a) cautions that a misapplication of time on task research findings occurs when the focus is on "time" at the exclusion of "on task."

Doyle (1983) offers an important distinction between time on activity and time on task. When activities or materials used by students in classrooms are unrelated to the attainment of learning goals or instructional objectives, the student is spending time on activity, but not time on task; this time will most probably not result in task accomplishment and student achievement gains. The central issue is not simply the time, but the nature of the task. The tasks must be efficient means to achieving the intended instructional objectives. A task refers to a goal-oriented set of activities specifically intended to produce a particular learning outcome (Posner, 1982). In general, the overall conclusion of studies examining the effect of quantity of time variables on student learning is that time is one factor, but not the sole factor, producing or limiting student achievement. Simply stated, time is a necessary but not sufficient condition for improving student achievement.

Instructional Match

A critical teacher decision-making task is solving what Hunt (1961) referred to as the problem of the match—how to match both the difficulty level and interest level of materials and assignments to the skill level and interest of a student. "The aim of good matching has been referred to as avoiding the twin pitfalls of demanding too much and expecting too little" (Bennett, Desforges, Cockburn, & Wilkinson, 1984, p. 41).

CASE STUDY

In a study of the quality of the learning environments provided by 16 teachers of six- and seven-year old students, Bennett et al. examined the match of instruction to students' needs, including:

- Analyses of a student's work,
- The student's strategy for completing the work, and

(Continued on next page.)

CASE STUDY (continued)

- The teacher's interpretation of the student's performance, used to determine the appropriateness of the match.

Less than half of the tasks were matched to student need; low achievers' levels were overestimated on 44% of the tasks; tasks involving the acquisition of new facts, skills, rules, or procedures were more frequently matched appropriately than practice tasks. The appropriateness of the task was not indicated by the students' distractable behavior, turning to friends for help, or looking unhappy.

Peterson, Carpenter, and Fennema (1989) examined the relationship of teachers' knowledge of students' knowledge to teachers' math instruction and students' math problem-solving ability. Teachers used different instructional approaches as a function of how much they knew about students' abilities.

Good and Brophy (1984) identify three aspects of a good match between student and instruction:

1. Difficulty level of assignments influences student persistence on tasks,
2. Materials are adapted to current student interests, and
3. Student engagement rates reflect the appropriateness of the match.

Low engagement during independent work activities, high rates of error, and frequent failure to complete assignments are the result of a poor match. Students' prerequisite skills or levels of prior knowledge are critical determinants of task appropriateness and student achievement.

CASE STUDIES

Results:

- Bloom (1976) found that 60-80% of variance in achievement scores could be attributed to prior learning.

(Continued in next column.)

CASE STUDIES (continued)

- Leinhardt (1978) found that initial student performance, as measured by a test of cognitive abilities, explained 49% of reading achievement and 43% of math achievement for disadvantaged children in regular, primary grade classrooms.
- In fact, the sum of the four instructional processes (opportunity, motivators, structure, and instructional events) in the model of classroom processes (Cooley & Leinhardt, 1980) contributed less than prior learning in explaining achievement variation.

Teacher Expectations

Communication of expectations for student performance is another instructional variable that has been found to be related to achievement (Kagan, 1992).

CASE STUDY

In an initial study, Brophy and Good (1970) examined the classroom behavior of four first grade teachers toward high and low achievers. While they found very few differences in the frequency of teacher contact, they did find that teachers were more likely to:

- Praise high achievers,
- Provide cues and repeat questions when high achievers made no response or answered incorrectly, and
- Criticize high achievers much less.

These findings have been supported by a recent extensive review of literature on differential teacher treatment of high and low achievers (Good & Brophy, 1984). The review also pointed to several other ways in which differential interactions occur, including less time for lows to answer, seating lows away from teacher, and less eye contact for lows. It should be noted, in contrast, that some studies (Cooper & Good, 1982; Good & Brophy, 1984) indicate that teachers do develop appropriate expectations for low achievers and treat them no differently from high achievers. The differences in the research findings may be explained in part by differences in teachers.

Brophy and Good's (1970) finding that students perceived as high achievers were given three to four times more opportunities to respond than those perceived as low achievers served as the impetus for a major California research project dealing with the effects of teacher expectations on student achievement (Kerman, 1982). The project was titled Equal Opportunity in the Classroom, but is more commonly known as TESA (Teacher Expectations and Student Achievement).

CASE STUDY

Teachers from 30 school districts volunteered to participate. Teachers in the experimental group received five inservice training sessions on ways to implement 15 teaching practices aimed at interacting with all students in an equitable manner.

About 2,000 low achievers in experimental classes showed statistically significant achievement gains over their low achieving peers in control classes. In addition to academic gains, a significant reduction in absenteeism and discipline referrals, which increased students' opportunities to learn, were found. While the project's focus was on students perceived as low achievers, all students in the experimental classes, not just the lows, showed significant gains over their counterparts in control classes.

Weinstein and her colleagues (Weinstein, Marshall, Brattesani, & Middlestadt, 1982; Weinstein & Middlestadt, 1979) have examined student perceptions of differential teacher treatment of high and low achievers by having students rate the extent to which various teacher behaviors are characteristic of treatment toward hypothetical male high achieving and low achieving students. Differences for the two hypothetical students were found for many of the teacher behaviors, including:

- Fewer chances to respond for low achieving students;
- More directions, rules, work, and negative feedback for low achievers; and
- More freedom and greater classroom opportunities for high achievers.

Similarly, students for whom teachers hold high expectations describe themselves as receiving less frequent criticism and more frequent praise than students for whom teachers hold low expectations (Cooper & Good, 1982). Weinstein (1983) also found that students form self-perceptions about their ability on the basis of teacher practices (largely feedback). Students' expectations more closely matched their teachers' expectations in those classrooms in which there existed high perceived differential treatment. Further, a greater percentage of "public cues" for poor performance is reported by students in classrooms with high differential treatment.

Student achievement is improved when instructors hold high expectations for student performance. Research tends to substantiate that teaching with goals and objectives relates positively to instructional quality and student achievement (Hartley & Davies, 1976). Fuchs, Fuchs, and Deno (1985) similarly found that goal ambitiousness (defined by comparing a student's baseline performance to the level of anticipated performance identified by the teacher) was associated positively with student achievement for special education students classified as emotionally disabled, learning disabled, and educable mentally retarded. Goal mastery was not related to student achievement and there were no significant interactions between the ambitiousness of goals and other factors, indicating the effect of goal ambitiousness on student achievement was not mediated by the students' special education classification or goal mastery.

Fuchs et al. concluded that special education practitioners need to "establish relatively ambitious expectations to stimulate greater achievement" (p. 68) and to reconceptualize how and why they use goals. They recommend the use of goals to improve the quality of instruction and feedback to students by using a data-based formative evaluation approach to monitor student progress and trigger needed changes in the instructional program. Direct and frequent measurement is more effective in increasing student achievement than simple informal teacher observations of students' progress (Fuchs, Deno, &

Mirkin, 1984; Fuchs, Fuchs, & Warren, 1982; Zigmond & Miller, 1986).

Teachers' sense of efficacy refers to the extent to which teachers believe that they have the capacity to affect student performance. Teachers' self-efficacy expectations influence their thoughts and feelings, choices of activities, amount of effort expended, and the extent of their motivation (Bandura, 1981), as follows:

- **Teachers with high efficacy** believe they have a positive effect on student performance, choose challenging activities, and persist when obstacles confront them.
- In contrast, **teachers with low efficacy** doubt their ability to influence student learning; consequently, they avoid some activities and reduce efforts or give up when confronted with difficulties (Ashton & Webb, 1986).

Successful teachers, those who obtained better than expected achievement gains from students, had belief systems that reflected positive attitudes that they could teach and that students could learn (Brophy & Evertson, 1976). Teachers assumed personal responsibility for making sure that students learned. In those cases where students were not mastering skills, the teachers viewed the obstacle as being an inappropriate teaching method, not an indicator of the students' inability to learn.

The construct of teacher efficacy was introduced into educational research by two Rand Corporation evaluation studies (Armor et al., 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977) that reported a significant, positive relationship between teacher efficacy and student achievement. Teachers' sense of efficacy consists of two independent dimensions:

1. A sense of teaching efficacy, and
2. A sense of personal teaching efficacy.

Teaching efficacy, an expectancy construct, refers to the learning outcomes teachers expect will result from teaching. In the Rand studies, this dimension was represented by the teachers' response to a single item, "When it comes right down to it, a teacher can't do much because most of a student's motivation and performance depends on his or her home environment" (Gibson & Dembo, 1984, p. 574). Teachers differ in the extent to which they believe that teaching has an effect on student performance regardless of external obstacles, such as family background, home influences, and student characteristics.

The second dimension, personal teaching efficacy, refers to individuals' assessments of their own teaching competence, and was represented by the teachers' response to the Rand item, "If I really try hard, I can get through to even the most difficult or unmotivated students" (Gibson & Dembo, 1984, p. 573). The sense of personal teaching efficacy influences teacher selection of classroom management and instructional strategies.

According to Ashton and Webb (1986), intervention efforts depend on which dimension, teaching or personal, is low:

> *If teachers' sense of efficacy is low because they believe their students cannot learn, changing their expectations requires evidence that, in fact, they can positively affect the performance of their low-achieving students. On the other hand, if teachers' low sense of efficacy is based on the belief that they lack [the] skills needed to teach low-achieving students, their sense of efficacy will be altered only if they learn teaching skills that they can see from experience make a difference in student learning (p. 6).*

CASE STUDIES

- In their evaluation of a large, urban school district reading program, Armor et al. (1976) reported that teachers' sense of efficacy was "strongly and significantly related to increases in reading achievement" (p. 24).
- In an evaluation of teachers' uses of innovations, Berman et al. (1977) found a strong positive relationship between teachers' sense of efficacy and the percent- age of goals achieved, the extent of teacher change, improved student performance, and teachers' maintenance of the innovations. They reported that the single most "powerful explanatory variable" (p. 73) related to student performance, and that teacher change was related to a teacher's sense of efficacy.

Unfortunately, the literature on teacher attribution indicates that many teachers ascribe the lack of student success to nonschool factors (Christenson, Ysseldyke, Wang, & Algozzine, 1983); thus, teachers may establish a mind-set against examining their own responsibility for student learning (Denham & Michael, 1981; Guskey, 1981).

Teachers' sense of efficacy and teachers' instructional behavior were compared in two studies.

FIRST STUDY

Gibson and Dembo (1984) examined the relationship between teacher efficacy and observable teacher behaviors related to academic focus, feedback, and persistence in failure situations in elementary classrooms.

Preliminary classroom observation data comparing four high-efficacy and four low-efficacy teachers revealed differences between the teachers' patterns of behavior:

- High efficacy teachers spent more time monitoring and checking seatwork, less time in small group instruction, more time in advanced preparation and paperwork, and were more effective in leading students to correct responses through cues, prompts, and questioning.
- Both types of teachers provided opportunities for students to correct their responses, but low-efficacy teachers were more likely to supply the answer, ask another student, or allow other students to call out the correct response.
- High sense of efficacy teachers were less likely to criticize students than were low sense of efficacy teachers, and were also more likely to continue to teach students who did not understand a problem or had not answered the teacher's question correctly.

Gibson and Dembo tentatively concluded that teacher efficacy is a valid construct leading to different teaching behaviors.

SECOND STUDY

Anderson, Greene, and Loewen (1988) examined relationships between and among teachers' and students' sense of efficacy, thinking skills, and student achievement.

Results illustrated that teachers' personal efficacy beliefs at the beginning of the year do affect student achievement, particularly at the grade three level.

Ashton and Webb (1986) have engaged in a major line of research to investigate:

1. The nature of teachers' efficacy attitudes,
2. Factors that facilitate and inhibit development of a sense of efficacy,
3. Teacher behaviors associated with teachers' sense of efficacy, and
4. The relationship between teachers' sense of efficacy and student achievement.

Results from ethnographic classroom observations in middle schools suggest that high and low self-efficacy teachers differ in their interactions with students, especially low-achieving students (Ashton, Webb, & Doda, 1983). Teachers with a high sense of self-efficacy, compared to those with a low sense of self-efficacy, more often minimized negative affects, set high academic expectations, and created an academically focused learning environment by emphasizing warm, positive interpersonal relationships.

CASE STUDY

One of the studies by Ashton and Webb (1986) involved classroom observation of 48 grade 9-11 teachers of mathematics and language communications in four high schools. The Metropolitan Achievement Test, which was administered in the spring of two consecutive years, was related to teacher efficacy, measured through three forms of self-report and teaching behaviors collected by three classroom observational measures:

- The Climate and Control System (Soar & Soar, 1980) was used to measure the classroom climate.

(Continued on next page.)

CASE STUDY (continued)

- **The Teacher Practices Observation Record (Brown, 1968) was used to gather information about the teachers' instructional styles.**
- **The Engagement Rate Form (Squires, Huitt, & Segars, 1983) was used to measure students' attentiveness.**

Several findings are relevant.

- First, the construct of teacher efficacy is comprised of two factors. The Rand item measuring teachers' sense of teaching efficacy correlated significantly with the Webb Efficacy Scale (a measure of teachers' beliefs in the efficacy of teaching) but not with the Efficacy Vignettes (a measure of teachers' perceived competence).
- Second, their findings support the hypothesis that teachers' sense of efficacy is related to student achievement.
- Furthermore, the achievement results support their contention that teachers' sense of efficacy is multidimensional and situation-specific.

Ashton and Webb (1986) found that:

- High school students' mathematics achievement was significantly related to teachers' beliefs in the efficacy of teaching; the variances accounted for by the students' prior achievement was increased by 24%.
- Students' language achievement was significantly related to teachers' sense of personal efficacy; the variance accounted for by the students' prior achievement was increased by 46%.
- Third, teachers with a high sense of efficacy differed from those with a low sense of efficacy on classroom management strategies, instructional methods, and relationships with students.

Low-efficacy attitudes were related to a distrust of low-achieving students, a control orientation in discipline matters, the use of embarrassment and criticism as management devices, the sorting and classifying of students by ability, a de-emphasis on active instruction and the importance of learning, and less monitoring of student academic progress. In contrast, the profile of teachers with high efficacy resembles the effective senior high teachers described by Evertson, Anderson, Anderson, and Brophy (1980). "Generally, the more successful teachers were rated as being more task oriented, affectionate, enthusiastic, oriented by students' personal needs, competent, confident, and academically effective" (p. 46). And "the teachers of lower ability classes who were more academically successful seemed to encourage students to express themselves, even to the extent of tolerating relatively high rates of called-out questions and comments. These teachers also tended to be friendlier, accepting more social contacts from their students and being more tolerant of personal requests" (p. 58).

Lesson Presentation

Substantive interaction is an essential characteristic of an effective lesson presentation and may be particularly important for students with learning problems who need instruction to include "explicit attention to meaning" (Doyle, 1983). Substantive interaction, defined in terms of presentation of information, monitoring of student progress, and ongoing feedback about performance, has been shown to be positively related to academic learning time (Fisher, Berliner, Filby, Marliave, Cahen, & Dishaw, 1980).

The notion that an active, questioning teacher is most effective with special education students is supported in two studies.

FIRST STUDY

Larrivee and Algina (1983) found that reading achievement was correlated positively with:

- **Higher ratings of teachers for efficient use of time,**
- **Supportive response to low-ability students,**
- **High frequency of positive feedback for student performance, and**

(Continued on next page.)

FIRST STUDY (continued)

- Good relationships with students.

Negative academic correlates included:

- Time spent off task or in transitions, and
- Teachers' frequency of interventions for misbehavior.

Positive, but nonsignificant, correlations with achievement were found for three teacher behaviors:

- Frequency of easy questions,
- Correct student responses, and
- Teacher assistance in improving incorrect responses.

However, these three teacher behaviors were significant correlates of academic engaged time.

These findings suggest that an effective teacher with special education students is one who keeps students actively engaged in learning by carefully monitoring and adjusting instruction to maintain high rates of success. In general, data on achievement correlates for mainstreamed special education students are consistent with the findings for low SES and low-achieving students in other elementary grade studies (e.g., Good & Brophy, 1986; Rosenshine & Stevens, 1986).

SECOND STUDY

The relationship between the allocation of instructional time in 30 special education classes and reading achievement for elementary school students categorized as learning disabled or mentally retarded was examined in a recent observational study (Sindelar, Smith, Harriman, Hale, & Wilson, 1986):

- The proportion of time spent in teacher-directed instruction accounted for a significant amount of variance in achievement gain.
- Time spent in independent instructional activities (silent reading, reading assistance) during reading was unrelated to achievement gain for both groups.

The authors concluded that effective special education teachers of students with learning disabilities and mental retardation actively interact with students, asking many questions and monitoring student responses carefully. These results are consistent with previous findings in special education resource classes of students with learning disabilities (Leinhardt, Zigmond, & Cooley, 1981) and regular education settings (Stevens & Rosenshine, 1981).

Three aspects of lesson presentation have been investigated in some detail:

1. Giving information,
2. Questioning students, and
3. Providing feedback.

Students achieve more in classes when their teachers' presentations are clear, sufficiently redundant, well-sequenced (Brophy, 1986), and delivered with enthusiasm (Brophy, 1986; Good & Brophy, 1984). Achievement is maximized when lessons begin with overviews, review objectives, call attention to main ideas and essential concepts, and review main points and procedures (Anderson et al., 1979; Good & Grouws, 1979).

Teachers' clarity in presenting information is influenced by their effectiveness in classroom management.

CASE STUDY

Emmer, Evertson, and Anderson (1980) studied 14 third grade teachers, seven of whom were effective managers and seven of whom were ineffective managers.

Although the students in all teachers' classes did not differ at the beginning of the year on aptitude or achievement scores, throughout the school year the students in the effective managers' classrooms showed greater on task behavior, and by the end of the school year, showed greater achievement gains than did the students in the ineffective managers' classes.

The two groups of teachers differed in several ways characteristic of instructional/teaching behaviors. The more effective managers:

- Communicated objectives, directions, and content more clearly;
- Adapted instruction to students' interests, skill levels, and attention spans; and

- Explained to students why they were learning particular material or content.

The importance of explicit instruction is highlighted in recent research within the reading comprehension area (Duffy, et al., 1986; Pearson & Dole, 1985). Pearson and Dole define instruction as explicit if a student knows what the skill to be learned is, how to apply the skill, why to use the skill, and when to use the skill.

CASE STUDY

In a review of 60 separate studies comparing explicit approaches to the more conventional approach (i.e., mentioning-practice-assessment) for teaching comprehension skills, Pearson and Dole found student performance on practice and application activities to be **superior** when teachers take the time, through extended discussions, to make clear to students the what, how, why, and when of the skills.

The studies reviewed included training both elementary (Gordon & Pearson, 1983; Hansen, 1981) and junior high students (Palincsar & Brown, 1984) in the use of specific strategies for improving reading comprehension; in most cases, the effects proved to be durable over periods ranging to six months. According to Pearson and Dole (1985), the success of explicit training procedures for low achievers is perhaps the "critical element" often missing in instruction. They suggest that modeling is something the teaching profession has known about for a long time and independent practice is the teaching profession's "forte." They propose that "in a sense, instruction can be conceptualized as what happens in those intermediate stages between total teacher responsibility (modeling) and total student responsibility (practice or application)" (1985, p. 23).

The cognitive aspects of the teacher's verbal explanation of the lesson content is underscored by several researchers. Tobias (1982) and Rohrkemper and Bershon (1984) view the teacher's role as one of instructional support for increasing students' meta-cognitive knowledge. According to these researchers, teacher assistance in organizing instructional content, maintaining student attention, eliciting student responses, and providing feedback are essential for developing thinking in students.

The relationship between teachers' explicit explanations and student cognitive processing of lesson content was examined by Duffy et al. (1986). Their results supported the hypothesis that explicit teacher explanations are associated with high achievement and high awareness of lesson content. While there were no differences in student engaged time (all teachers met explicitness criteria), there were qualitative differences in teachers' instructional talk which, in turn, were reflected in students' understanding during post-instruction interviews. Duffy et al. (1986) concluded:

> *It is not enough to simply be explicit. Explicitness is a relative term, and includes a broad range of qualitative interpretations . . . . Teachers . . . were explicit in the sense that they were definite and clear about the lesson topic and about the need to specify how to do it. However, they differed in their conceptual interpretation of what learning that lesson topic meant and what process good readers utilize when performing it (p. 248).*

While the findings on difficulty level of questions are mixed, it seems clear that around 75% of teacher questions should be answered correctly by the first respondent (Anderson et al., 1979; Brophy, 1986) and that the rest should elicit incorrect or incomplete answers rather than failures to respond (Anderson et al., 1979).

Optimal teacher questioning varies with classroom context. Basic skills instruction requires drill, practice, and fast-paced review in which questions are answered quickly and correctly. But, teaching students to generalize, evaluate, or apply their learning may require teachers to ask questions that have no single correct answer. Bennett et al. (1984) argue that timing and the quality of teacher questions are as important as frequency of student errors. Frequent errors may be appropriate early in a unit, while errors should be minimal during the mastery stage, ideally at the end of the unit.

Higher level questions (e.g., analysis, evaluation) have not been found to be better than lower level questions (e.g., knowledge, comprehension). In fact, lower level questions are more frequent and have been found to facilitate learning of higher level objectives (Brophy, 1986).

Findings on the cognitive level of questions are inconclusive. However, several studies show that the frequency of questions is related to learning (Brophy & Evertson, 1976; Soar, 1973; Stallings, 1975; Stevens & Rosenshine, 1981).

Frequency of questions may be an academic correlate because teachers with high rates of academic questioning tend to have well-managed classes and spend much time actively teaching. Good and Brophy (1984) found that these teachers supplement lectures, demonstrations, reading, and seatwork activities with recitations, discussions, and opportunities for students to express themselves.

Carlsen (1991) examined the interaction between context of questions, content of questions, and the nature of students' responses. He argued that research on questioning has failed to take into account the fact that questions are mutual constructions of students and teachers.

Teachers who provide regular and extensive feedback elicit higher achievement (Brophy, 1986). According to Brophy, however, the relationship between teacher feedback and student performance is weaker and less consistently replicated than correlational findings on lesson presentation or teacher questioning. Yet, it is known that acknowledgment of correct responses is important and that positive feedback does not require excessive praise; in fact, neutral, task-specific praise is related positively to student achievement. The relationship between frequency of praise and achievement is usually quite low and sometimes negative (Brophy & Evertson, 1976; Stallings, 1975). Praise is more effective when it is specific, used with dependent or anxious rather than confident students, and delivered in ways that focus on the achieved product rather than on the recipient. Teachers of higher achieving students discourage irrelevant student questions, and respond positively to relevant questions by answering them, redirecting them to the class, or incorporating them into the lesson presentation. Thus, characteristics of effective praise include primarily immediacy, task specificity, and maintaining an academic focus; less emphasis is placed on frequency.

The most critical aspect of effective feedback is the degree to which it enhances student opportunity to respond. Emmer et al. (1980) found differences in management of feedback by more and less effective teachers.

CASE STUDY

- More effective teachers asked more questions, responded to student-initiated comments four times as often in a 50-minute period, and kept the student engaged regardless of the accuracy of the student's response.
- After a correct response, effective teachers praised, asked a new question, or linked the answer to a new idea or question.
- After a wrong answer, these teachers provided cues and prompts or asked a new question of the student.

Similarly, Anderson et al. (1979) found that first graders who were higher achieving in reading received sustaining rather than terminal feedback. Sustaining feedback sustains the interaction between teacher and student through teacher rephrasing of questions or provision of cues or prompts. A teacher using terminal feedback ends the interaction by giving the student the answer or calling on someone else. Researchers (Brophy & Evertson, 1976; Good, Ebmeier, & Beckerman, 1978) caution that continued attempts to elicit an accurate response may result in "pointless pumping." Students who received more teacher explanation in response to their specific questions and needs achieved less in the Beginning Teacher Evaluation Study (Denham & Lieberman, 1980). These situations may indicate a poor instructional match; therefore, increased opportunity for student response was negatively associated with achievement (Brophy, 1986).

Assigned Tasks

There are several concerns identified within the literature related to assigned tasks.

First, teachers make many assignments, but these assignments frequently involve activity for its own sake (i.e., "busy work") rather than a task with a clear goal or outcome.

CASE STUDY

Durkin's (1984) observational study during reading instruction for first, third, and fifth grade students indicated that:

- Reading assignments were used more to control students than to teach students.
- Teachers spent little or no time on new vocabulary words, background information, or teaching students to preread comprehension questions.
- Much time was spent on teacher questions and workbook pages.

There was a striking similarity across grade level work in terms of preparing students to do assigned work. Durkin argues that a goal-oriented set of activities intended to produce a particular learning outcome is necessary to improve reading comprehension of all students, and of low-achieving students in particular.

Second, tasks must be selected with an individual student's learning rate and prior knowledge in mind. According to Gettinger (1984a), research has emphasized time spent in learning, but has omitted the "time needed" factor. She hypothesizes that time needed and time spent may interact to predict achievement outcomes, and that time needed to learn "may provide the missing link underlying the 'sufficiency' aspect of the relationship between time and learning" (p. 26). Gettinger (1984b) investigated individual differences in the number of learning trials to reach criterion on training words during phonics instruction on two short vowels; the extent to which this measure of learning rate during training was related to learning outcome (i.e., retention and posttest performance) was the variable of interest.

CASE STUDY

Thirty-six children with IQs between 76 and 104 served as subjects while attending a camp for students with learning and behavior problems.

- All children were successful in learning the 16 training words at the end of nine days of instruction; however,
- Those children with poor initial learning rates experienced less success in reading transfer words on the posttest and evidenced poorer retention on the training words.

In another study (Gettinger, 1984c), the causal effects on reading and spelling achievement of time spent and time needed for learning were investigated with fourth and fifth grade students in regular classes.

CASE STUDY

Time needed to learn was measured by counting the number of learning trials taken to reach mastery when no task-specific feedback was provided.

Time spent in learning was measured by the number of trials determined by the student as needed to achieve 100% accuracy.

The four measures of achievement included a standardized test, teacher assigned grades, and criterion tests for material learned (one measured accuracy, the other measured retention two days later).

Results indicated that time needed contributed significantly to learning. On the average, about 91% of the explained variance in learning was accounted for by time needed compared to approximately 7%, on the average, for time spent.

Gettinger and Lyon (1983) attempted to identify specific variables that might predict the discrepancy between time needed and time spent in learning.

CASE STUDY

96 elementary school boys who were referred to a summer camp because of classroom behavior problems related to attention deficits, disruptive classroom behavior, low frustration tolerance, or low self-concept served as subjects.

As a measure of time needed for learning, the boys were required to read a fourth or fifth grade level science or social studies passage until 100% accuracy was achieved on a multiple-choice criterion test tapping factual comprehension.

Self-regulated learning trials in which rereading was stopped when they believed the material had been mastered was used as a measure of time spent.

Spending less time than needed resulted in a lower retention level.

Gettinger and Lyon found the best single predictor of the discrepancy between time needed and time spent was reading achievement, which accounted for 36% of the explained variance. Noncognitive characteristics (e.g., locus of control, low self-concept, interest level) together accounted for a smaller (17%), but significant, percentage of explained variance in time needed and time spent discrepancies; attention deficits also accounted for a significant amount of variability (10%). The results underscore the importance of identifying children who are likely to spend more or less time engaged in learning than needed.

In summary, Gettinger and her colleagues discuss time needed to learn measures as viable predictors of student achievement, often measured by retention and application of learned material. Evidence exists for the importance of student entry characteristics, particularly prior skill level, in explaining discrepancies between time needed and time spent. The level of students' prior learning consistently explains a substantial portion of achievement variation for regular (Bloom, 1976; Leinhardt, 1978) and special education (Haynes & Jenkins, 1986) students.

A third point related to assigned tasks is that students must complete academically relevant tasks with high success rates. Good and Brophy (1984) indicate that advocates of mastery learning approaches expect at least 80% success rates on assigned work, and advocates of programmed learning expect success rates to approach 100%. Recent classroom research indicates that teachers who program for success rates of 90-100% on assigned work produce greater learning (Good & Brophy, 1984). Success rates for particular activities vary with the nature of the activity, the availability of the teacher to monitor student progress, and the provision of corrective feedback (Rosenshine & Stevens, 1986).

EXAMPLE

During a new lesson presentation in the whole group setting where the teacher is available for immediate corrective feedback:

- The lesson objectives may be achieved even if the bright and successful student is able to answer only about 70% of teacher questions accurately.
- However, a success rate of 80% is preferred for less confident or less successful students during presentation of new material.
- On review lessons and independent practice lessons during seatwork, a very high success rate (i.e., 90-100%) is required to prevent students, particularly low-achieving students, from giving up on assignments.

In an extensive descriptive study, Chow (1981) compared academic learning time for students with and without disabilities during math in mainstream classrooms. He found significant differences between the groups in the amount of time they were engaged in successful tasks. Students with learning disabilities had significantly more engaged time with a low success rate, while students without disabilities had more engaged time at a high success rate. No significant correlations were found between academic learning time variables and achievement for students with learning disabilities, suggesting that these students were not exposed to appropriately designed learning tasks.

Student understanding of the instructional lesson is another index of whether the student is working on assigned tasks at the appropriate difficulty level.

CASE STUDIES

Peterson and her colleagues have examined fifth and sixth graders' descriptions of their thought processes during mathematics instruction (Peterson & Swing, 1982; Peterson, Swing, Braverman, & Buss, 1982) using a stimulated-recall technique in which students were shown videotaped segments of their math probability lesson and asked to describe what they were thinking during the lesson. Student attention, student understanding, student motivation, and use of varied cognitive strategies were studied:

- Students who reported good attention to task performed better on their seatwork problems.
- In these studies, the students' self-reports of attending correlated with success on the mathematics problems more highly than did classroom observers' reports of student attending.
- Controlling for ability differences, student reports of their understanding of the lesson (i.e., why and what they understood) were related positively to achievement.
- In addition, independent of ability, student reports of using specific cognitive strategies, rather than global strategies such as thinking or listening, also correlated with achievement.

The specific strategies related to student achievement were "relating the information being taught to prior knowledge" and "trying to understand the teacher or a difficult problem."

The extent to which students understand the goals of instructional tasks is a critical issue in classroom learning. Researchers who analyzed detailed narrative records of observations of first grade students during seatwork activities and student interviews found that the students believed that the teacher's goal was that they complete the work and progress through a book, not that they understand the specific content (Anderson, 1985b). Since teachers' statements basically were procedural and omitted information about the content of the assignments, Anderson concluded that either the first graders were accurate in depicting the intent of the teachers, or that they were less able, as first graders, to perceive abstract levels of teacher intent. Winne and Marx (1982) have found that teachers' intentions for classroom instruction are often misinterpreted by even upper elementary students.

There is evidence that when teachers provide specific information on task goals and requirements, the academic performance of average and learning disabled students improves.

CASE STUDIES

In two related studies, Wong, Wong, and LeMare (1982) examined the influence of fifth, sixth, and seventh graders' perceptions of criterion task demands on their comprehension and recall of reading passages.

- In the first experiment, learning disabled and average achieving students were given explicit instructions about the types of comprehension questions that would appear on a test following their reading of a 400-500 word passage.

  Students in the control condition simply studied the passage for as long as they wanted. Knowledge of the demands of the comprehension task resulted in improved posttest performance for both groups of students.

- In the second study, explicit recall instructions that stressed studying particular features of the reading passage were provided to a different experimental group sample of learning disabled and average students in grades 5-7.

  Learning disabled and average students in the control condition were given vague, general task instructions.

(Continued on next page.)

CASE STUDIES (continued)

A significant group by knowledge of criterion task interaction was found. The learning disabled students who were given explicit knowledge of the criterion task recalled as much of the passage content as average students in the control condition. However, they did not recall as much as the average students who were provided with explicit knowledge of task demands.

Knowledge of the demands of the recall task significantly improved the recall performance of both learning disabled and average students when compared to those students in the control condition. Wong et al. concluded that clear instruction about task demands significantly improves the performance of average and learning disabled students on comprehension and recall tasks. Concluding that it is important to inform students of the rationale, objectives, and expectations when assignments are made, they state:

> *What the teacher intends the children, in particular, learning disabled children, to learn or accomplish at the end of studying or working on a given assignment should be clearly conveyed to the children. Instructions such as, 'Read carefully the assignment' are insufficient in inducing appropriate learning activities in children. To promote optimal learning, teachers must inform students of the specific objectives in the assignment (p. 126).*

Goal-setting is not always a teacher task. Self-regulated learners set their own goals. Schunk (1990) examined the self-regulated learning processes of goal-setting and perceived self-efficacy. He found that learners set goals for themselves, observe and evaluate their performance, and reset goals or modify feelings about themselves on the basis of their observations. He described how teachers can teach students to set realistic goals.

A fourth point related to assigned tasks is that those tasks presented with enthusiasm, and in an interesting way, influence student participation and achievement. Teacher interest in the subject and teacher vigor and dynamics (e.g., voice inflection) are two aspects of enthusiasm that result in higher student attention and greater student achievement. Good and Brophy (1984) believe that students' reactions to academic tasks are influenced by the way teachers initially talk about them. Tasks that the teacher presents by stressing positive expectations, such as the knowledge or skills that will be gained from them, are thought to be better received by students than tasks presented with little enthusiasm.

Brophy's (1983a) initial work on student motivation in the classroom suggests that teachers could present tasks more positively to students.

CASE STUDY

Observations were conducted in six grade 4-6 classrooms; observers recorded teachers' presentation statements about tasks:

- The 249 identified presentation statements were categorized into neutral, positive, or negative student expectations about tasks. Teachers simply launched into tasks without describing them in 68 instances.
- For 317 task introductions, teachers made no introduction 21% of the time, made a neutral statement 29% of the time, introduced the task in positive terms 25% of the time, and provoked negative expectations 25% of the time.
- Teachers created expectations for tasks only half the time, and the frequency of positive expectations was equal to that of negative expectations.

Brophy concludes that teachers are "not doing nearly as much as they could do to foster intrinsic motivation (or continuing motivation) in their students for the knowledge and skills they were learning at school" (p. 301).

Practice

Two forms of practice, guided and independent, are essential teaching functions identified by Rosenshine and Stevens (1986) and described by Rosenshine (1986) as aspects of explicit instruction. A number of correlational studies reported by Rosenshine (1986) have shown that students make greater academic gains when teachers provide increased guided practice, particularly by asking many questions (Anderson et al., 1979; Good & Grouws, 1979; Soar, 1973; Stallings & Kaskowitz, 1974). During successful guided practice, teachers ask for a specific answer (product question) and for an explanation of how an answer was found (process question).

In these studies, frequency of practice, percentage of answers students give correctly, and students' active participation are important factors during guided practice. Students, particularly low achievers, need a good deal of practice and need to actively practice and process when learning new material. By the end of the guided practice, students are expected to perform the steps accurately, but slowly and hesitantly. Independent practice provides the additional practice students need to be fluent or to reach automaticity. Automaticity and fluency of facts, skills, and concepts used in subsequent learning are essential so students' attention can shift to comprehension and application (Samuels, 1981). Effective independent practice materials are the same as in guided practice.

Students are more engaged during seatwork when the teacher spends more time in guided practice and when the teacher actively monitors independent seatwork by circulating throughout the room and supervising students' work (Fisher et al., 1980). Lengthy explanation during independent seatwork is negatively associated with engaged time and student success rates. Rosenshine (1986) considers lengthy explanations during seatwork as indicative that initial teacher modeling and guided practice were inadequate and insufficient. To the extent that the student learning rate is slower, the student needs more review, less presentation, and more guided and independent practice. To the extent that the student's learning rate is faster, the student needs less review, more presentation, and less guided or independent practice, which can often be given as homework.

While homework has been designated as a neglected research area, several studies tend to support the view that regularly assigned and checked homework, related to the daily lesson, enhances student achievement (e.g., Coulter, 1979; Good & Grouws, 1979; Walberg, Paschal, & Weinstein, 1985). Homework appears to be valuable because it provides distributed practice on the skills being learned. Research is needed on the effectiveness of different kinds of homework and the appropriate amount of homework for different types of students (Brophy, 1986).

Classroom Management

Several studies underscore the importance of establishing a classroom environment conducive to student learning and student attention to academic tasks (Brophy, 1979, 1983b; Cooley & Leinhardt, 1980; Emmer et al., 1980; Evertson & Emmer, 1982; McCaslin & Good, 1992). Good and Brophy (1984) have shown that effective managers show three major clusters of behavior:

1. Behaviors that teach students appropriate conduct,
2. Skills in diagnosing students' engagement rates, and
3. Behaviors that convey purposefulness.

Effective classroom procedures are aimed at preventing classroom disruptions and are considered a prerequisite for maximizing instructional time. Several studies indicate that the first few weeks of school are critical for establishing effective rules and efficient routines that serve as guidelines for student behavior for the remainder of the school year (Anderson, Evertson, Emmer, 1980; Emmer et al., 1980; Evertson, Emmer, Sanford, & Clements, 1983). Effective managers directly teach conduct and housekeeping guidelines as well as learning-related behaviors such as how to read and follow directions for seatwork, how to line up, how to get the teacher's attention, and how to use the learning center (Anderson et al., 1980).

Effective managers differ from less effective managers in the degree to which they provide modeling, rule rehearsal, and feedback to students regarding rules and behavioral expectations (Anderson et al., 1980; Emmer et al., 1980).

Effective classroom managers demonstrate or model discriminations to be learned (e.g., talking softly vs. talking loudly).

The Classroom Management Improvement Study (Evertson et al., 1983) evaluated the extent to which materials and teacher workshop activities help teachers establish and maintain effective learning environments. Forty-one grade 1-6 teachers were trained in 11 aspects of classroom organization and management. Data collected during the first eight weeks of school included descriptive classroom narrative records, counts of students' on task or off task behavior, ratings of student success and inappropriate or disruptive behavior, logs of classroom time use, ratings of teacher use of specific instructional management techniques, and teacher interviews. Treatment teachers were rated by observers as having more efficient routines and procedures (e.g., consistently enforces work standards, signals appropriate behavior, stops inappropriate behavior quickly, ignores inappropriate behavior) and being more consistent in managing student behavior (e.g., effective monitoring).

While there was not a significant difference between the amount of disruptive student behavior or inappropriate student behavior in the two groups of teachers, results indicated that the treatment teachers had significantly higher levels of student task engagement and appropriate behavior. In addition, treatment teachers were rated as giving clear instructional presentations and explanations. This study did not address student achievement gains; however, effective classroom management has been related to student achievement (Cooley & Leinhardt, 1980; Rosenshine & Berliner, 1978).

Effective managers monitor and maintain student attention. According to Kounin (1970), effective managers understand that periods of student inattention tend to be fleeting when teachers provide a continuous academic signal. Through teacher position, continual scanning, and eye contact with students outside the immediate lesson, teachers maintain an effective surveillance system that helps hold students accountable for their behavior during seatwork activities without interfering with the momentum of the ongoing lesson. Effective managers redirect unengaged students without disrupting the ongoing activities of the classroom by praising task-relevant behaviors and using nonverbal signals.

Englert and Thomas (1982) applied Kounin's criteria to special education settings.

CASE STUDY

These researchers examined classroom management and instructional practices that facilitate student task involvement in the special education setting:

- Students with higher rates of task engagement had teachers who planned shorter but more frequent lessons per hour, used teacher positioning and eye scanning to monitor the whole class, and reinforced acceptable behavior contingently and appropriately.
- These teachers circulated throughout the room during transition periods to answer questions and monitor student behavior.

Supporting Kounin's original findings, they concluded that effective group management strategies in special education led to a high level of student involvement.

Effective managers also consider the needs of their students and adjust their teaching to those needs, supporting the notion that these teachers arrive at a good match. Emmer et al. (1980, p. 228) note that teachers who are effective managers have a "sense of students' perceptions and needs." In contrast to other teachers, effective managers are more likely to appropriately consider attention span of students, relation of lesson content to student interest, appropriate work standards, and assurance of reasonably high levels of student success in relation to the teacher's lesson design. Thus, in addition to an understanding of management techniques, Good (1983) concludes that these teachers "possess a keen understanding of how students learn and develop" (p. 134). In a sense, the active monitoring keeps them in tune with individual students' needs.

Effective managers use different grouping arrangements to meet student needs (Emmer et al., 1980). Grouping decisions have a positive effect on academic outcomes when specific conditions are met. Specifically, Bickel and Bickel (1986, p. 494) summarize positive academic benefits for students when the following conditions are met:

1. Number and size of groups are dependent on student characteristics and content taught;
2. Different groupings are used for different subjects;
3. Frequent shifts among groups occur during the school year as well as between years;
4. Groups are based on current levels of specific skills;
5. There is a combination of small group and whole class instruction; and
6. Groupings are responsive to instruction.

Conversely, negative effects on student performance can result when grouping practices are held constant across subject areas, when they are based on testing prior to instruction, and when they are static and influenced heavily by perceptions of general ability.

Effective managers model a task-oriented attitude for their students. They establish an academically demanding climate, conduct an orderly, well-managed classroom ensuring student success, implement instructional practices that promote student achievement, and provide opportunities for student responsibility and leadership. Teachers who establish academic objectives elicit higher student achievement than teachers who:

- Fail to establish clear objectives,
- Are unable to accomplish academic objectives due to poor management skills, or
- Establish primarily affective objectives (Brophy, 1986).

The physical arrangement of the room, traffic patterns, and rules and procedures that minimize intrusions on instructional time are considered by effective managers (Brophy, 1983b). Effective managers not only alert students to the behaviors they expect but also hold students accountable for those behaviors. Students are held accountable for completing work on time and, according to Good (1983), effective managers construct classroom environments in which expectations for student behavior are "continuous." Therefore, regular times are scheduled daily to review independent work, teachers regularly circulate to check on progress during seatwork times, and completed papers are returned promptly with feedback. These teachers maximize use of the available time for instruction and see that students learn the content. Doyle (1983) argues that accountability drives the task system and students tend to take seriously only the work for which they are held accountable.

Efficiency and order are important, but so is positiveness. Solomon, Watson, Delucchi, Schaps, and Battistick (1988) implemented a program designed to enhance childrens' prosocial development. The intervention was a long-term classroom intervention supported by a school-wide program. Focus of the program was on:

- Cooperative activities,
- Developmental discipline,
- Activities promoting social understanding,
- Teaching prosocial values, and
- Helping activities.

Students in the program schools scored significantly higher on measures of prosocial behavior and interpersonal behavior than did students in control schools.

Opportunity to Learn

Opportunity to learn is related to student achievement and is measured in various ways, including content covered (Borg, 1979; Good, Grouws, & Beckerman, 1978), percentage of test items taught through lecture and recitation (Cooley & Leinhardt, 1980; Dunkin & Doenau, 1980), and students' active responding time or opportunity to respond (Greenwood, Delquadri, & Hall, 1984). Influenced by the length of the school day and school year (Harnischfeger & Wiley, 1985), opportunity to learn is determined by four instructional variables:

(1) time allocated to academic activities (Fisher et al., 1980; Stallings, 1975); (2) classroom management (Brophy & Evertson, 1976; Brophy & Good, 1986; Fisher et al., 1980; Good & Grouws, 1979); (3) consistent student success and academic learning time (Fisher et al., 1980); and (4) active teaching (Good & Grouws, 1979; Rosenshine & Stevens, 1986). It may be that opportunity to learn is the key indicator of instructional effectiveness for an individual student.

In the Instructional Dimensions Study, Cooley and Leinhardt (1980) viewed student performance as a function of prior knowledge and four specific classroom processes:

1. Opportunity,
2. Motivators,
3. Structure, and
4. Instructional events.

Opportunity is the use of instructional time in classrooms and the similarity of the curriculum to the tests (i.e., curriculum alignment or curriculum overlap). Motivators, intentionally not defined as a student attribute, include aspects of the curriculum and in-class interpersonal behavior that encourage student learning. Structure, intended to be the materials and methods construct, considers the organization of the curriculum, the specificity of objectives, and the manner in which a student and a curriculum are matched.

Instructional events include the content, frequency, quality, and duration of instructional interactions.

Opportunity, which is comprised of time and curriculum overlap, was the most important predictor of reading and math achievement for elementary students. Time spent in learning was a very important part of opportunity; however, curriculum content also made a major difference. Students performed better on tests if they had been exposed to the content covered by the test and the form of the test items. Time itself is not the issue; it is what one is doing with the time—or the degree to which students have an opportunity to learn that which is tested.

Pace refers to progress through the curriculum, number of words per lesson, number of pages taught per lesson, asking more questions, or presenting learning trials more quickly. Maintaining a brisk pace and a high rate of progress through the curriculum produces greater academic gains (Englert, 1984; Rosenshine, 1983), presumably because higher achievers have a greater opportunity to learn.

Opportunity to learn for students with disabilities, particularly in basic skill areas, can be viewed as a function of the amount of time allocated to instruction in the resource room and mainstream classroom.

CASE STUDY

In an observational study of reading for fourth, fifth, and sixth grade students with mild disabilities, Haynes and Jenkins (1986) found that:

- **Resource time combined with regular classroom time provided these students with reading time comparable to that of their peers without disabilities.**
- **In addition, the nature of reading instruction and reading activities was similar in both settings.**

They argue that special education services, based on an "equal opportunity" model as opposed to a "catch-up" model, may supplant not supplement the classroom reading program. For resource room instruction, they found extensive variability in time schedules, and in how time was allocated to different reading tasks. In addition, these decisions were often influenced more by school context variables (e.g., scheduling constraints) than by student characteristics (e.g., achievement level).

Allington, Stuetzel, Shake, and Lamarche (1984) found that participation of 27 remedial reading students in Chapter I services did not provide those students any additional time for reading instruction.Their finding that remedial instruction did not increase on task behavior was attributed to several factors:

- Little curricular congruence between materials and strategies used in regular and remedial reading classrooms,
- Unclear goals,
- Little or no monitoring for advancement toward goals,
- Missing directed activities in the mainstream, and

- Less seatwork time to complete assignments.

Allington et al. concluded that a greater proportion of time should be allocated for teacher-directed reading, and that time taken for classroom management and nonacademic activities must be reduced and reallocated to direct reading activities.

Categorical Comparisons

Relatively few studies have compared the nature of instruction for disabled and nondisabled students.

CASE STUDY

Ysseldyke and colleagues have been engaged in a major line of research comparing the quantitative nature of instruction for students with mild disabilities who have been labeled as learning disabled (LD), emotionally/behaviorally disturbed, and mentally retarded (EMR); students without disabilities served as a control group:

- The quantitative nature of instruction was measured using a 10-second interval observation system in which data were gathered on instructional ecology (activity, task, grouping arrangement) and student responses (academic engaged time, academic responding, management, inappropriate behavior).
- Each student was observed for one entire school day, excluding lunch, recess, physical education, gym, and special assembly programs.
- The quantitative nature of instruction for students with and without disabilities during a typical school day was quite similar. There were few differences in time allocated to instruction in different content areas (Ysseldyke, Thurlow, Christenson, & Weiss, 1987), in the kinds of tasks used (Ysseldyke, Christenson, Thurlow, & Bakewell, 1990), or in instructional grouping arrangements (Ysseldyke, Thurlow,

(Continued in next column.)

CASE STUDY (continued)

Christenson, & McVicar, 1990) as a function of category. There were few differences among categories in academic responding and engagement rates, but several differences emerged as a function of the students' placement in mainstream or special education settings.

- In general, students spent more time actively engaged in academic responses in special education settings, whereas inappropriate behavior and management responses were higher in mainstream settings.

The qualitative nature of instruction for students served in categorical self-contained special education classrooms was investigated through classroom observation by Algozzine, Morsink, and Algozzine (1986). They found no differences among teachers of LD, EMR, and ED students in the variety of instructional strategies used, the use of effective questioning, provision of feedback, implementation of effective management strategies, and active student involvement. The classroom climate and teaching activities for elementary students with disabilities served in self-contained classrooms was similar, with the exception that teachers of EMR students modified instruction less than teachers of ED students.

Some categorical differences have been noted by Sindelar et al. (1986) in their observational study of LD and EMR students. They found that students with learning disabilities worked with teachers 40% of actual instructional time while students with retardation worked with teachers 60% of instructional time. Students with retardation spent a greater proportion of teacher-directed instruction in teacher questioning and less in directed reading than students with learning disabilities, which spent a greater proportion of allocated time in silent reading. For the most part, instruction is not differentiated on the basis of categorical labels. Rather, instruction is similar for students carrying different categorical labels, and for students with and without disabilities.

Summary

There is no single definition of effective instruction. Anderson (1984a) contends, however, that the key instructional elements are relatively few in number and surprisingly compatible. He states:

> *Effective instruction from the point of view of increasing time on task may proceed something like this:*
>
> - *First, tasks should be chosen which are at an appropriate level of difficulty for the students.*
> - *Second, the task should be communicated directly to the students. That is, students should know: (1) what they are to learn, and (2) how they are to demonstrate that learning.*
> - *Third, behavior settings and learning activities which have a high degree of continuity should be chosen (for example, activities involving small groups working on a common goal, activities in which students must make or do something, activities in which the materials are continuously present, and teacher-demonstration activities).*
> - *Fourth, teachers (or other adults) should monitor the learning. Such "monitoring" would involve, among other things, pacing the learning of the students and indicating the nature and purpose of transitions between activities.*
> - *Fifth, behaviors such as those described in the categories of "with-it-ness," smoothness, momentum, and group learning should be exhibited by the teacher during an activity in which he/she has a direct involvement (such as recitations or classroom discourse) and during the monitoring of activities during which he/she is not directly involved (such as seatwork).*
> - *Sixth, appropriate task-oriented behaviors on the part of the student should be reinforced.*
> - *Seventh, feedback should be given to students concerning their attainment of the specified tasks.*
> - *Eighth, and finally, errors and misunderstandings of students should be corrected before they are allowed to accumulate and interfere with subsequent learning.*
>
> *In general, instruction of the nature described above will result in high levels of student time on task (pp. 159-160).*

While there is no single definition of effective instruction, it is clear that there is not one definition for mainstream classrooms and another for special education classrooms. Thus, if there is a hallmark of an effective learning environment for an individual student, it is the degree to which the environment is constructively active.

In effective learning environments, teachers engage in active teaching and monitoring student performance to a predetermined goal. The student is actively engaged in completing relevant academic tasks successfully; tasks refer to a set of goal-directed activities toward a specified learning outcome (Posner, 1982). The classroom atmosphere is academically focused with a humanistic orientation. Much instructional support to meet students' needs exists through informed feedback and adaptive instruction. Evaluation is based on student performance data in relation to the initial teaching goal. The learning environment is dynamic, changing to meet the needs of individual students to maintain high rates of academic learning time.

What constitutes effective instruction varies with context. Rosenshine (1983) adds, "now that we can list the major functions or components which are necessary for systematic instruction, we can turn to exploring different ways in which these functions can be effectively fulfilled" (p. 350). Successful teaching models, programs, teachers, and instructional approaches share common characteristics, regardless of the specific setting (mainstream or special education). Different methods by different teachers in different classroom contexts may be used to implement these common characteristics.

Effective instruction is an interactive process, one in which teacher and student behavior only have meaning within the classroom context. The teaching-learning process is no longer seen as something "done" to students but rather as something that students participate in; students' responses not only affect the degree of learning but also influence the teacher's decision about instruction.

The literature reviewed herein is primarily correlational in nature, either between aspects of instruction and student achievement or teacher behavior and student achievement. A limitation of the data is that the correlations often reflect the relationship between two variables at one point in time. In addition, the database consists of a large number of low to moderate correlations rather than a small number of high correlations. Finally, few studies compare the nature of instruction for disabled students in mainstream classrooms. While consistent findings across several studies provide a knowledge base from which to describe effective instruction, the research findings do not tell educators what to do.

Home Environment Correlates*

The paramount importance of home and community in promoting learning and shaping children's attitudes are highlighted in three national reports on schooling: A Nation at Risk (National Commission on Excellence in Education, 1983), Turning Points (Carnegie Council on Adolescent Development, 1989), and Beyond Rhetoric (National Commission on Children, 1991). Similarly, the national education strategy, AMERICA 2000, recognizes that parents are integral to the educational success of children and adolescents. In this section, evidence for the effect of the home environment on student achievement is reviewed. Family variables such as socioeconomic status (SES), family constellation, and mental health and medical problems are excluded from the review because these factors, although related to student achievement, are seen as factors beyond the control of educators, and consequently less amenable to intervention.

In addition, recent research has focused on the within-home variables that contribute to children's success in school (White, 1982). White analyzed 101 studies and concluded that these aspects of the home environment have a greater impact than SES on student outcomes: parents' attitudes, guidance, and expectations for their children's education and learning; quality of verbal interaction; participation in cultural and learning-related activities; and overall stability in the home.

Socioeconomic status (SES) is an important predictor of student achievement, but it is not the sole determinant of the child's home learning environment. Recognize that family structural variables (e.g., SES, marital status, number of children) and family process variables (e.g., interaction patterns, support for learning) are not mutually exclusive; there is undoubtedly an interactive effect on student achievement (Milne, 1989). Families living with economic stress may have more difficulty creating a positive home atmosphere, one that is supportive of children's learning. Educators need to understand and support all families, and in particular, families living in adverse conditions. There is no room for blaming families or seeing families as deficient (Davies, 1989).

The literature base examining the effect of the home on academic achievement is not easy to organize or summarize. Correlational studies are most common; therefore, causality is not implied. Studies have employed adequate sample sizes with students from different grades and ethnic backgrounds, followed systematic procedures, and used varied methodology (observation, interviews, ratings). Student achievement is measured most often by standardized tests with adequate reliability and validity. Although researchers have used different data collection and data analysis procedures, and defined family factors differently, findings point in a similar direction; therefore, there is convergence in the family factors critical for students' success. There is not always a direct relationship between a family factor and student achievement; moderator variables include the influence of SES, gender, ethnicity, and to a lesser extent, parental education level. More data are needed to understand the interactive effect of family process (e.g., structure and support for learning) and family structural (e.g., SES) variables on children's learning. Despite this need, the effect of the home on student's learning must be acknowledged, and has led researchers to conclude that the home is an educational environment that plays an important role in children's learning and achievement (Sloane, 1991).

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* Parts of this section were drawn from two previous manuscripts: (1) Christenson, S.L., Rounds, T., & Franklin, M.J. (1992). Home-school collaboration: Effects, issues, and opportunities. In S.L. Christenson & J.C. Conoley (Eds.), *Home-school collaboration: Enhancing children's academic and social competence* (pp. 19-51). Colesville, MD: National Association of School Psychologists and (2) Christenson, S.L., Rounds, T., & Gorney (1992). Family factors and student achievement: An avenue to increase students' success. *School Psychology Quarterly, 7*(3), 178-206.

First, we review the efficacy of school-based programs for increasing home support for learning. Next, we review the parent involvement literature, describing different kinds of parent involvement activities and the effects on key stakeholders. Then we describe research that focuses on the match between home and school environments. Fourth, we describe the effects of specific home variables on students' academic outcomes. We close with a summary of the philosophy with which school-based programs for increasing home support for classroom performance must be delivered. We think of this philosophy as a set of guidelines on how to create a positive home-school ethos for student success.

Home Support for Learning

Graue, Weinstein, and Walberg (1983) evaluated the efficacy of 29 controlled studies of elementary school-based programs for increasing the educationally stimulating qualities of the home environment. They concluded from their meta-analysis that school-based home instruction programs have large positive effects on children's academic learning. Reasons for increased positive learning outcomes may include:

- The quality and quantity of academic instruction is extended;
- Children's efficiency and motivation for classroom learning is increased because of parental support;
- Children watch less television; and
- Closer and more constructive family relations are encouraged.

Additional evidence for the effect of home-school collaboration on children's school performance and social development is provided by a review of selected partnership programs in large cities conducted by Collins, Moles, and Cross (1982). They identified programs and practices for grades 4-12, where parents and teachers worked collaboratively to promote students' educational success. As part of the work of the Families as Educators Team, supported by the National Institute of Education, 28 home-school collaboration programs, all of which helped parents act in educational capacities such as home tutors, homework and attendance monitors, or participants in home learning activities, were systematically studied in the 1980-81 school year. The programs were situated in 12 states and 24 cities with populations of 500,000 or more.

Programs had multiple goals and modes of contact with homes:

- Increased reading and math achievement was a major emphasis of 24 programs; improved social development, including conduct, interpersonal relations, and self-concept, was a major emphasis of 14 programs; and 17 programs were concerned in a major way with school attendance.
- To involve parents, 15 used individual conferences, 17 used workshops, and 15 made home visits or frequent use of telephoning.
- Seventy-five percent of the programs supported parents in home tutoring, monitoring of homework and attendance, and participating in home activities to promote student learning.

- Twenty-two of the programs were at the secondary level. This suggests that school districts have made a concerted effort and are interested in working with families of older students.
- Fifty percent of the programs targeted low-income families; another four programs targeted minorities.
- Nine programs reported no evaluation data.
- The remaining 19 programs surveyed reported the following results:
  - Reduced absenteeism,
  - Higher achievement scores,
  - Improved student behavior, and
  - Increased confidence and participation among parents.

  Specifically, 12 programs indicated student achievement gains, eight indicated improved academic self-concept, seven better attendance, and five better school conduct. Eighteen programs reported greater parent support of and communication with schools and 11 programs reported greater parent involvement in students' learning.

Collins et al.'s caveat that the reported gains and changes in behavior cannot be attributed entirely to strengthened home-school relationships is characteristic of research in the field. Home-school collaborative efforts are usually embedded in comprehensive program efforts to improve school learning.

Home-school collaboration efforts have shown achievement gains for inner-city elementary school children.

CASE STUDY

A steering committee comprised of parents and educators (at the Grant School in Chicago) was created to meet seven goals (e.g., increase parents' awareness of the reading process, improve parent-school-community relations) in a program called Operation Higher Achievement (Walberg, Bole, & Waxman, 1980):

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CASE STUDY (continued)

- **Committee members developed contracts that were signed by the district superintendent, principal, teachers, parents, and students in grades 1-6. Contracts stated the specific details of individuals' roles and responsibilities.**
- **Educators signed contracts that specified the educational services to be provided the students.**
- **Parents agreed to provide a quiet place for home study, encourage their child by discussing school work daily, recognize their child's progress, and cooperate with educators on matters of school work, discipline, and attendance.**

Ninety-nine percent of the students in 41 classes (826 students in grades 1-6) signed contracts with their parents and teachers. Students involved intensely in the home-school intervention gained 1.1 grade equivalents; students less intensively involved gained .5 grade equivalent. Walberg et al. (1980) concluded that inner-city children can make middle-class progress if educators work cooperatively with parents in pursuit of common goals.

In a widely quoted study by Smith (1968), the efficacy of a parent support program to improve the reading achievement of elementary school children from low-income, inner-city families was examined:

- Parents of second and fifth graders in the experimental group attended group meetings at school and were instructed to establish homework routines at home, read to their children, read in the presence of their children, ask questions about their children's work and praise their efforts, and arrange a quiet place for daily study.
- Children in the experimental group made greater gains in reading vocabulary over the five month period than the matched comparison group.
- While there were no significant differences in reading comprehension for the

groups, parents from the experimental group were overwhelmingly favorable toward the program, suggesting the potential for gains to be measured later.

These studies indicate that simply suggesting to parents what they can do at home is not implicated by the literature. Rather, studies report increases in academic outcomes for students when educators seek the assistance of parents and directly support and instruct parents in ways to support school learning (e.g., Smith, 1968; Walberg et al, 1980).

From his frequently cited observational study of family life for poor African-American secondary students, Clark (1983) showed that certain patterns are present in homes of high achieving students. Family life of these students was characterized by frequent dialogues between parents and children, strong parent encouragement of academic pursuits, warm and nurturing interactions, clear and consistent limits, and consistent monitoring of how time is used. Parents of high achievers felt personally responsible to help their children gain knowledge and basic literacy skills, communicated regularly with school personnel, and were involved in school functions. Clark labeled this parenting style "sponsored independence," which he has subsequently shown to be integral to successful school performance across grade levels (Clark, 1988).

Over two decades ago, Rankin (1967) found high achievement of third and fourth graders from an inner-city Detroit school correlated with greater parent contact with schools and specific parental behaviors. Parents of high achievers provided experiences for children (e.g., playing games, talking), showed interest in their school work, helped with homework, set expectations for school, developed children's interest in reading, and took initiative to contact school personnel.

Similarly, in a review of the parent involvement literature, Becher (1984) reported that parents of high achievers held high expectations for student performance, modeled learning, reinforced what their children learned in school, engaged in verbal conversations, provided opportunities to solve problems, and perceived themselves as "teachers" of their children. These behaviors and attitudes of parents compose what Walberg (1984) described as the **curriculum of the home**. The curriculum of the home includes informed parent-child conversations about everyday events, encouragement of leisure reading, monitoring and joint analysis of television viewing, expression of affection, interest in children's academic and personal growth, and delay of immediate gratification to accomplish long-term goals. Based on a synthesis of over 2,500 quantitative studies of academic learning, Walberg concluded that "the curriculum of the home predicts academic learning twice as well as the socioeconomic status of families" (p. 400).

In general, researchers find that home support for learning has a powerful impact on student achievement. Of the 18 studies reviewed by Leler (1983):

- Thirteen showed positive gains in achievement as a result of parent support for learning,
- Five showed no difference between experimental and controls on any measure, and
- None showed negative results.

These findings have been evident for over two decades (Gordon, 1978; Palmer, 1977). Lazar (1978), in his longitudinal study of 11 early childhood projects, documented measurable differences in achievement and significantly fewer assignments to special education classes and grade retentions for economically disadvantaged high school seniors who had graduated years before from preschool programs with high parent involvement in schooling.

Parent Involvement

The effect of parent involvement on student achievement has been examined almost entirely at the elementary school level; in fact, a disproportionate number of studies have focused on primary grades. Most research has been conducted in urban schools with subjects from low and middle SES levels; several ethnic groups have been represented. Correlational studies are typical. Dependent measures include standardized tests of achievement, usually reading achievement. Parent involvement is often not clearly defined, types of involvement vary considerably across studies, and different methods of measuring parent involvement (parent report, teacher report, or direct observation) exist. The fact that many parent involvement programs are part of a larger school improvement program and are unique from school to school has made systematic evaluation difficult and problematic (Kagan, 1984). It is difficult to identify specific effects of parent involvement.

Researchers who examine components of effective schools often find high levels of parent involvement.

CASE STUDIES

- In a study of 20 elementary schools with high levels of sixth grade reading achievement gains, community involvement correlated highly with the amount of achievement gain (Armor et al., 1976).
- In a study of three schools that designed programs to improve reading achievement, the one that had the most comprehensive involvement program showed the greatest improvement in reading for disadvantaged students in grades 2-6 (Gillum, 1977).
- As part of a larger school improvement program, Comer (1984, 1988) found achievement gains when parents became more involved in the governance of the school.

Achievement gains have been the greatest when parents are involved at all levels of school life through general support of schools' academic and social goals, active participation in daily activities, and in school planning and management, a pattern that is referred to as meaningful parental participation (Comer & Haynes, 1991).

Four comprehensive literature reviews on the effects of parent involvement in education have been written in less than a decade (Becher, 1984; Henderson, 1989; Kagan, 1984; Sattes, 1985). Henderson reviewed 48 studies; the other authors either duplicated or added other studies. Conclusions about the effects of parent involvement in education are:

- Parent involvement is correlated with student achievement. When parents are involved, students have higher grades and test scores and better long-term academic achievement.
- Parent involvement affects noncognitive behavior: Student attendance, attitudes about school, maturation, self-concept, and behavior improve when parents are involved.
- There are benefits for parents, teachers, community, and schools when parents are involved. In general, there are more successful educational programs and effective schools.
- All forms of parent involvement strategies seem to be useful; however, those that are meaningful, well-planned, comprehensive, and long-lasting offer more options for parents to be involved and appear to be more effective. Student achievement is greater with meaningful and high levels of involvement.
- Achievement gains are most significant and long-lasting when parent involvement is begun at an early age.

Overall, data on parent involvement in education suggest that it is a viable, worthwhile intervention or avenue for improving educational outcomes. In this section, we describe kinds of parent involvement activities and effects on stakeholders.

Kinds of Activities

Parent involvement includes various activities that allow parents to participate in their child's education at school and at home. Chavkin and Williams (1985) describe seven parent involvement roles:

1. Paid school staff,
2. School program supporter,
3. Home tutor,
4. Audience,
5. Advocate,
6. Co-learner, and
7. Decision maker.

They found parents were interested in many more roles than those they were actually involved in. There was an especially large discrepancy between actual parent involvement in decision making roles and the parents' interest in these roles. Seventy-four percent of the parents were interested in the role of decision maker, while only 21% actually participated in a decision-making activity. There was considerable discrepancy between interest in the role of advocate (meeting with school officials to ask for changes in the practices of the school or in the system) and participation in advocate activities. There was less discrepancy between role and participation in the more traditional roles of home tutor (interest 91%, participation 86%) and audience (95% interest and 92% participation).

The majority of teachers surveyed did not see decision making as an important role for parents. Similarly, Snider (1990) reported data from the Metropolitan Life Survey of the American Teacher that showed 47% of parents, but only 18% of teachers, believed having parents serve on curriculum decision committees was very valuable. More parents (51%) than teachers (26%) believed involving parents on management teams to determine school policies was valuable.

Epstein (1987a) suggests that five types of parent involvement are needed in a school's comprehensive program to share responsibilities with families for the education of children. The five basic types are:

1. Basic obligations of families to build positive home conditions that support learning (e.g., nutrition, place to study);
2. School-home communications about school programs and children's progress (e.g., notices, report cards, conferences, phone calls);
3. Involvement at school (e.g., attend school functions, volunteer);
4. Involvement in learning activities at home (e.g., monitor, discuss, and help with homework, follow through on specific requests from teachers); and
5. Involvement in decision making (e.g., participatory roles in PTA, school governance committees).

A sixth type of involvement, collaboration and exchanges with community organizations, represents yet another type of parent involvement (Epstein & Dauber, 1991). This type includes school programs (e.g., after-school care, health services) and coordination of services and activities to support children's learning; it involves connections with community agencies and businesses that share or could share responsibilities for children's education.

EXAMPLE

An increasing proportion of children live in homes where the median family income is at poverty level. For these children, it may be virtually impossible for families to provide educationally relevant materials (e.g., books, play materials). Educators could find community resources and develop business partnerships to provide educationally relevant materials.

A common thread that runs through these definitions of parent involvement is the focus on the parents' role in educating their children. Involvement can take many different forms, including volunteer services for schools, home tutoring/teaching, reading to children, communicating with teachers, information exchange and decision sharing, or child advocacy. Regardless of the specific form, the essence is an active interest in and encouragement of children's education. This interest is then communicated to children through various parental behaviors that show children their parents are concerned and interested in their learning.

Parents tend to be more involved in their children's education at home than at school. Epstein (1985) reported that only 4% of parents in her sample—one or two parents per classroom—were active at school. In her survey of 1,269 inner-city parents, Epstein (1986) examined levels of involvement and found similar results. She divided involvement into four levels: (1) basic obligations, (2) school-to-home communications, (3) involvement at school, and (4) involvement in learning activities at home. She found that 97% of the parents supplied their children with necessary school supplies, and 90% said their children had a regular place to study at home. At the next level there were fewer parents involved: 16% had received no memos from the teacher; 35% had attended no parent-teacher conference, and 60% never spoke to the teacher on the phone. For the third level, parent involvement at school, there was even less participation: 70% of the parents were never involved in activities assisting the school staff. For the last level, involvement in learning activities at home, Epstein reported techniques used most frequently by teachers. All techniques involved reading: reading to the child or listening to the child read, encouraging the parent to go to the library, and loaning books or loaning materials to the parents to use at home. Techniques used the least included: discussions, informal learning activities, contracts, and parent observations.

Dauber and Epstein (1989) asked 2,317 inner city parents about their involvement at school, with homework, and in reading activities at home. Parents rated their frequency of involvement on a four-point scale ranging from: never (1) to many times (4). Parent involvement at school was the lowest with a mean of 2.36, involvement with homework had a mean of 3.54, and involvement in reading activities at home a mean of 3.0. The overall mean of all 18 items was 3.07. Survey results showed that parents in this population were more likely to be involved at home than school.

Parents' and teachers' attitudes toward parent involvement have been investigated in surveys. Parents and teachers share much common ground in their opinions about the role of parents in education (Williams & Stallworth, 1984). Both agree that teachers should communicate frequently with parents about what is happening at school and how parents could assist their children's learning at home, work closely with parents, and be trained in parent involvement strategies and models. Both agree that parents should enforce rules about homework, cooperate with and help teachers, and attend school functions.

While both parents and teachers believe that parent involvement is vital to a child's success in school, Williams and Stallworth (1984) replicated the finding of Chavkin and Williams (1985) and Snider (1990) that educators favored parent involvement in traditional ways (e.g., chaperone field trips, supervise homework, fund-raising) and rated nontraditional ways (e.g., setting discipline policy, curricular decisions) as inappropriate or less useful. Principals and teachers rated all but the most traditional, nonthreatening roles (e.g., school program supporter, audience at school functions) to be unimportant. Parents, on the other hand, favored all forms of parent involvement, including tutoring at school and serving on school governance committees. While teachers and principals rated decision making as the least important role parents play, superintendents and school board members rated parent decision making at school as important.

Data reported from the Metropolitan Life Survey of the American Teacher by Olson (1990) suggest that both parents and teachers believe parents contribute to less than desirable educational outcomes for students. A majority of both parents and teachers agreed that many or most parents fail to discipline their children, fail to motivate them to learn, leave their children unsupervised after school, demonstrate too little interest in their children's education, and neglect to see that their children's homework is completed. Again, parents and teachers agree; it appears that opinions held by the two major forces entrusted with educating and socializing children in society, parents and teachers, are quite similar. Both see parents as important for their child's educational success, both see less than desirable follow through by parents.

Effects on Stakeholders

Literature on the effects of parent involvement is concerned with how parent involvement affects key stakeholders: students, parents, teachers, and the school as a whole. This question is probably the most researched area in the parent involvement field, and the conclusions of most studies are positive.

Most of the research that examines the effects of parent involvement on students is interested in how it impacts student academic achievement.

CASE STUDY

Epstein (1988) and her colleagues at John Hopkins University conducted a series of studies with 3,700 first, third, and fifth grade teachers and their principals in 600 schools in Maryland. They surveyed parents, teachers, principals, and children concerning parent involvement, and collected longitudinal achievement data on a subset of students.

In a study of 293 third and fourth graders, Epstein found that students who had teachers who frequently used parent involvement activities had larger reading achievement gains from fall to spring on the California Achievement Test than did students who had teachers who did not use parent involvement. This effect was independent of teacher quality, students' initial achievement, parents' education, parents' improved understanding of the school program, and the quality of students' homework. Interestingly, these same children didn't have similar gains in math achievement. Epstein found that the type of parent involvement most often used by these teachers was home learning activities that involved reading. She hypothesized that the kind of learning activity directly affected the type of academic gains.

In another study of 613 fifth graders, Epstein (1982) found that students who had teachers who frequently used parent involvement activities were more likely to be nominated by their teachers as "homework stars."

Several literature reviews corroborate Epstein's conclusion that parent involvement has positive effects on student achievement.

CASE STUDIES

In a review of 18 parent involvement studies, Henderson (1989) concluded that parent involvement correlated highly with student achievement. However, she reported that simply involving parents at home was not enough to improve a school's average level of achievement. In order for the school as a whole to benefit, parents must also be involved at school.

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CASE STUDIES (continued)

In another review of the literature, Kagan (1984) found that the type of parent involvement determines how well it correlates with achievement, and that a combination of home and school involvement seems to be the most effective.

In addition to increased academic achievement, other positive effects of parent involvement on students are documented. Epstein (1982) found that fifth grade students who had teachers who emphasized parent involvement had better attitudes toward school, more regular homework habits, and more positive attitudes toward homework. These students also reported more similarities between home and school and more teacher familiarity with their parents. Kagan (1984) reported that parent involvement correlated with improved attendance, a reduction in suspension rates, and improved attitude toward homework.

Parent involvement also has positive effects on parents. Kagan and Schraft (1982) found that parents at a low-income school showed strong correlations between level of involvement and personal aspiration; similar correlations were not found at a middle-income school. Low-income parents who were paid a small amount for their involvement demonstrated higher aspirations and perceptions of power than their unpaid counterparts. Parent involvement with learning activities at home had positive effects on parents' attitudes and knowledge. Epstein (1986) found that when teachers frequently used parent involvement techniques, parents felt teachers worked harder to involve them. Parents also had increased understanding of the school's program and rated their child's teacher higher on teaching quality and interpersonal skills.

Two literature reviews in parent involvement describe some of the benefits to parents. Becher (1984) reported that parents developed more positive attitudes about the school and the school personnel, helped muster community support for the program, and became more active in the community after becoming involved at school. Parents also developed more positive attitudes about themselves and improved their relationship with their child. Kagan (1984) discovered that some of the effects of participation on parents included attitudinal change, improved economic status, and increased political participation.

There is less research that examines the effects of parent involvement on teachers. There is some evidence that when teachers use parent involvement techniques they allocate more time to instructional activities and rely more on student-oriented activities than text-oriented activities (Becher, 1984). Epstein (1986) found that teachers who frequently used parent involvement rated parents as more helpful and willing to follow through than did teachers who infrequently used parent involvement activities. She also found that teachers who used parent involvement made equal demands of less educated and better educated parents; however, teachers who did not use parent involvement made more frequent requests of less educated than better educated parents.

Research has shown that parent involvement also has positive effects on the school as a whole. Comer (1984) and his colleagues at the Yale Child Study Center implemented a school improvement program in several elementary schools in the New Haven school system. His model has four components:

1. A representative governance body,
2. A parent program,
3. A mental health team, and
4. A staff and curriculum development program.

As an integral part of the plan, parents were involved in the governance body, and participated as paid aides in the classroom and in a parent group with regular group activities. After four to five years, the schools in the program increased overall reading and math achievement, boosted attendance, and significantly reduced behavior problems. Comer (1984) wrote, "Parent presence in responsible and respected roles in the schools sent a message to the children: The school people and the program are important. In direct and indirect ways the parent aides and the parent group members conveyed the expectations to the children that they should behave well socially and achieve well academically" (p. 333).

His model has been implemented in many schools nationwide. Comer and his colleagues have shown that students' and parents' perceptions of classroom and school climate in experimental schools are significantly improved when compared with students' and parents' perceptions in control schools (Haynes, Comer, & Hamilton-Lee, 1989). School climate is considerably enhanced when parents are included in the planning and organizing of school activities.

Henderson (1989) reported that some researchers assess the impact of the community and community-school partnerships on student achievement by examining whether schools with high achievement have more community involvement and support than schools with low achievement. She summarized the results of three studies conducted between 1969 and 1985 that illustrate the importance of parent and community interest in education. McDill, Rigsby, and Meyers (1969) surveyed students, teachers, and principals in 20 randomly selected high schools in eight states. Parent involvement, defined by the degree to which parents were apathetic to school policies, interested in their children's progress, and asked for appointments with teachers to discuss their child's schoolwork, was identified as a "Climate Source Variable" and correlated with math achievement measures and college plans when the effects of ability and family educational background were controlled. They concluded that the degree of parental and community interest in education was the critical factor in explaining the impact of the high school environment.

Wagenaar (1977) found that public schools in a large midwestern city with high achievement levels more actively encouraged parent and community involvement than schools with lower achievement. He gathered data from 135 schools to determine levels of community involvement and support. There was a positive, moderate relationship between community involvement and support, and schools' average reading and math scores when the effects of socioeconomic status (SES) were controlled. Measures of community group support, number of and attendance at school functions, and number of community groups using school facilities were strong, positive correlates of achievement. Citizen participation in policy factors and decision making were unrelated to achievement. Wagenaar concluded that behavioral involvement at school, use of school facilities, and an open communications atmosphere are important for high success in schools.

Identical conclusions were reached by Phillips, Smith, and Witte (cited by Henderson, 1989) who studied 22 school districts in the Milwaukee metropolitan area in 1985 and found parent involvement was associated with high school performance regardless of family income level, grade level of the school, or school location. Phillips et al. concluded:

> *What these findings suggest is that it is not simply the amount of time parents spend interacting in schools or the effectiveness of that interaction . . . . The findings mean that parent actions in the home and the psychological process of creating positive expectations also are likely to matter in school performance. Those schools that do well are likely to have active parent organizations, numerous volunteers, and a high frequency of positive interactions between parents and teachers, but those actions will be backed up by and begin with early educational nurturing and positive educational expectations for the child. Poor, uneducated single parents are less likely to be able to afford, or perhaps understand the importance of, either school or home involvement. Thus without fundamental changes, the reinforcing cycle will continue (cited by Henderson, 1989, pp. 51-52).*

In summary, there is a substantial body of literature that documents the positive effects of parent involvement in schooling. Some benefits include improved achievement, attitudes, and better relationships between teachers and parents. Despite the general consensus in this area of research, there are several methodological concerns that need to be addressed. A significant problem in this area is that most of the studies are correlational and causality is difficult to determine. As noted by Kagan (1984), "Correlation studies of school-based parent involvement and achievement are not sufficiently precise to determine the mechanism by which achievement is influenced" (p. 14).

Parent involvement often is not clearly defined or it is defined differently in studies. There is not a clear understanding of which types of parent involvement lead to which outcomes. What is most promising is that the parent involvement in education literature does not propose shifting educational responsibilities from the school to home. Henderson (1988) stated that "schools can become more effective if they do involve parents, as long as they also do the rest of their job" (p. 152). Parent involvement is seen as an additive if not synergistic effect, and home-school collaboration is the goal. In Bronfenbrenner's (1979) terminology, however, most studies have focused on the microsystem (e.g., family influences on student achievement), rather than on the mesosystem, the concrete linkage between a child's experience in home and school environments.

■ Match Between Home and School Influences

Little research to date has focused on the mutual effects of home and school influences on student performance in school. One exception is research conducted by Hansen (1986).

CASE STUDY

Hansen examined the extent to which the interplay of family interactions and classroom interactions influence children's success in elementary schools. The focus of his investigation was on continuities and discontinuities between families and classrooms in their forms of interaction rules. Thus, he studied differences in how things are said and done in families compared to classrooms:

- **Particular attention was paid to mismatches in the way family members and classroom participants related to one another.**

(Continued on next page.)

CASE STUDY (continued)

- **Rule structures of home and classroom environments were categorized into exchange and communal rules for 196 children in eight elementary school classrooms in suburban New Zealand.**
- **Three broad categories were used to describe home and classrooms: cohesive, coercive, or laissez-faire, a classification similar to Baumrind's (1966) parenting styles.**

Hansen hypothesized that children perform best in school situations in which the rule structures parallel those of their homes. He found that the greater the discontinuity in interaction rules in home and school, the more children's academic grades declined. He also found that there was no preferred classroom or home type; rather, the match between home and school was the critical factor for children's academic success. Children from cohesive families showed improved grades in cohesive classrooms, and a decline in coercive and laissez-faire classrooms. This pattern was similar for the other two types, allowing Hansen to conclude that "there is an interactive influence of families and classrooms; children are relatively advantaged in classrooms that are similar to their families in rules of interaction, and relatively disadvantaged in classrooms that are dissimilar" (Hansen, 1986, p. 656).

In a seminal review of family influences on achievement and motivation and their relationship to classroom performance, Hess and Holloway (1984) concluded that:

1. There is some convergence in the family process variables critical for students' success in school, and
2. Discontinuity between home and school influences negatively affect either home or school support for learning.

According to Hess and Holloway, family process variables associated with achievement are verbal environment of the home, parental expectations for child success or press for achievement, parental warmth and nurturance toward the child, parental control, and parental beliefs and attributions. Studies show that families indirectly influence achievement, student motivation, and classroom performance (reading or math) for their children in many ways, including:

- Fostering children's interest and skill in reading and math;
- Providing quality reading material and math experiences;
- Modeling learning by reading and using math in the home;
- Reading with children;
- Engaging in discussions about reading with their children;
- Expecting children to learn math and to read;
- Requesting verbal responses from their child; and
- Believing their child's effort, not luck, will result in learning.

The role of parent-child interaction in school-relevant tasks, such as language development or communicative competence, children's style in solving problems, and opportunities for memory and attention, is a relatively new research area. In general, parents' attempts to teach and guide their children's acquisition of language, develop a reflective problem-solving style, orient their attention, and emphasize memory of experiences and skills correlate with school-relevant outcomes. Hess and Holloway (1984) caution:

> *The outcomes of these processes depend to a great degree on three features of the social world in which the child lives: the consistency (consensus) among socializing agents about the goals of education, the degree to which these goals are taken seriously, and the ability of the socializing agents to counter knowledge, values, and goals that come from competing sources—for example, television and peers. If multiple sources of information and reward are diffuse and contradictory, they erode the effectiveness of family and school; discontinuities between family and school can compromise the effectiveness of both (p. 212).*

Family Influences

In this section, specific family effects on student achievement that appear well documented in the literature are reviewed. Family effects include: parent expectations, parent attributions, homework, verbal interaction, modeling of reading, television viewing, parent-child interaction, discipline, and home learning activities.

Parent Expectations

Parent expectations are defined as future aspirations or current expectations for children's academic performance. Most studies have investigated the relationship between academic achievement and parent expectations for elementary-age, white students in suburban and urban schools. Subjects are from low to high SES backgrounds; some samples include African-American children; and sample sizes are generally medium- to large-sized. Correlational studies are most common, although two longitudinal studies were found. Dependent measures include standardized achievement tests, grades, and actual educational attainment.

A general conclusion that can be drawn is that academic achievement is consistently correlated with high parent expectations (Boersma & Chapman, 1982; Cohen, 1987; Marjoribanks, 1988; Scott-Jones, 1984; Seginer, 1983, 1986; Thompson, Alexander, & Entwisle, 1988).

CASE STUDIES

- Entwisle and Hayduk (1988) found that parents' estimates of their children's ability had long-term effects on achievement.
- Realistic and accurate parent expectations, (i.e., those close to the child's actual performance) were associated with superior performance on cognitive tasks (Scott-Jones, 1984).

Children's perceptions of high parent expectations also correlate with achievement (Gigliotti & Brookover, 1975; Johnson, Brookover, & Farrell, 1989), so it is not clear whether it is the children's perceptions or actual parental expectations that influence achievement; however, children's own beliefs and expectations about their achievement are often highly correlated with those of their parents (Wigfield, 1983). In one study, parents' beliefs were more directly related to children's own expectations than were the children's past performances (Parsons, Adler, Karzala, & Meece, 1982). Examining how parents communicate expectations to children may be critical to understanding the relationship between parent expectations and achievement.

The relationship between parent expectations and achievement is complex. Seginer (1986) found that SES was correlated with mothers' expectations for their sons' academic performance, which in turn may influence academic achievement. "White collar" parents tend to influence their children's achievement through expectations and modeling, while "blue collar" parents tend to influence children through expectations only (Cohen, 1987). Marjoribanks (1988) found stronger correlations between parents' aspirations for their children and childrens' perceptions of those aspirations with educational and occupational attainment in low SES families than in middle SES families. Parents have different perceptions of boys' and girls' math aptitude despite similar performance; girls' math aptitude is rated lower (Holloway, 1986; Parsons et al., 1982).

Parental Attributions

Parent expectations are influenced by reasons parents ascribe for their children's performance in school. In general, the use of effort attributions (i.e., "You did well because you tried hard and practiced a lot.") to explain school performance is strongly related to positive achievement outcomes (Stevenson & Lee, 1990). Inappropriate attributions and expectations can either discourage academic achievement when they are too high or depress motivation when they are too low (McGillicuddy-DeLisi, 1982). There appear to be ethnic differences in attributions; relative to Chinese and Japanese mothers, American mothers emphasized ability explanations (i.e., "You did well because you are smart.") as the basis for achievement (Stevenson & Lee, 1990).

CASE STUDIES

The effect of the child's gender on parent attributions is unclear:

- **Several studies found that mothers tend to attribute their son's successes to ability and their relative failures to lack of effort, while daughters successes are attributed to effort and failures to lack of ability (Dunton, McDevitt, & Hess, 1988; Parsons et al., 1982).**
- **In contrast, Holloway (1986) found that mothers of girls most often cited work habits and abilities as reasons for high performance, while mothers of boys cited effort, current teacher, and overall training. For low performance, mothers of both boys and girls blamed lack of effort and poor work habits.**
- **Mothers of boys with learning disabilities tend to attribute their son's failure to lack of ability (Tollison, Palmer, & Stowe, 1987).**

Research in the area of math indicates that mothers hold higher aspirations for boys than girls. This appears to be true even when boys and girls perform similarly in math and when girls like math more than do boys (Holloway, 1986).

Homework

Homework is one link between home and school that receives much attention. In general, students assigned homework tend to achieve higher than those assigned no homework (Clark, 1983; Foyle, 1987; Wolf, 1979). The amount of time devoted to homework is related to the achievement of both elementary and secondary students, but its beneficial effects are especially clear in middle and high school students (Cooper, 1989). Even though homework has less impact on achievement for elementary students, benefits of homework for this age group include encouraging positive attitudes toward school and studying, and encouraging learning outside of the classroom environment.

Parents, as well as teachers, can take part in monitoring homework to maximize effectiveness. Research suggests that graded homework has a stronger impact than homework that is not graded (Paschal, Weinstein, & Walberg, 1984). Feedback and reinforcement produce higher student achievement (Foyle, 1987; Keith, 1987), and the implementation of consequences for completion or non-completion may improve effectiveness (Harris, 1983). Parents can be a part of the homework process by providing a structure conducive to studying within the home. Although no studies that directly investigate how home structure influences achievement were found, implications from many investigations have led to the widespread belief that parents should provide:

1. Appropriate space to complete homework,
2. An established schedule,
3. Adequate lighting and essential materials, and
4. Teacher support by providing rewards, checking homework, and stressing the value of school (Bradshaw & Amundson, 1985; Chavkin & Williams, 1985; Clark, 1983; Cooper, 1989; Keith, 1987; Radencich & Schumm, 1988).

Verbal Interaction

Verbal interaction within the home is another variable affecting achievement. Researchers have examined home environments and found that environments with: high levels of encouragement, verbal guidance, complex language use, participation in meal-time conversation, and verbal interaction (with siblings as well as parents) are associated with academic achievement and high verbal skills (Bradley & Caldwell, 1976; Goldenberg, 1987; Jones, 1972; Norman-Jackson, 1982; Portes, Franke, & Alsup, 1984; Snow, 1983). The amount and type of language used in the home environment are important variables; higher achievers come from homes where there is a press for linguistic competence (Mohite, 1987; Rosenthal, Baker, & Ginsburg, 1983). Children with high verbal ability have parents who make deliberate efforts to provide language opportunities for them (Jones, 1972). Some research indicates that reading achievement may be more affected than math achievement by these variables (Marjoribanks, 1980; Rosenthal et al., 1983).

CASE STUDY

Dornbusch and colleagues included bilingual families in a study and found that the child's experience with two languages stimulated higher levels of achievement and higher effort (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987).

Modeling of Reading

Parental modeling of reading behavior also seems to be important in developing verbal skills:

- When adults model reading in the home, children have higher levels of reading achievement and more interest in literature (Hess, Holloway, Price, & Dickson, 1982; Teale, 1978).
- Students with high levels of interest in literature and reading achievement have parents who read for leisure and otherwise (Morrow, 1983; Teale, 1978).
- Availability of books in the home is associated with reading achievement. Factors associated with the home environments of readers include availability of printed materials and contact with paper and pencil (Hess et al., 1982; Morrow, 1983; Shields, 1983; Teale, 1978).
- Children with high levels of interest in literature not only come from homes with many books, but are also more likely than poor readers to own a library card and to be taken to the library (Hess et al., 1982; Morrow, 1983).
- In addition to books, the availability of play materials such as paper, pencils, and crayons is related to later achievement (Bradley & Caldwell, 1976; Johnson, Breckenridge, & McGowan, 1984; Teale, 1978).

Television Viewing

The results of research on the effects of television viewing on student achievement are contradictory. Much of the literature (including the meta-analysis conducted by Williams, Haertel, Haertel, & Walberg, 1982 and a compilation of 10 studies by Neuman, 1980) indicates that there is a negative association between achievement and amount of television viewing that becomes negligible if SES and IQ are controlled (Neuman, 1980; Ridley-Johnson, Cooper, & Chance, 1982; Ritchie, Price, & Roberts, 1987; Searls, Mead, & Ward, 1985; Williams et al., 1982). Other researchers have found a strong negative relationship between watching large amounts of television and achievement (California State Department of Education, 1980; Comstock & Paik, 1987; Fetler, 1984; Starkey & Swinford, 1974; Wagner, 1980).

Effects of television appear to differ across SES categories and children's age:

- Increased television viewing in upper-class families is correlated with a relative decrease in academic performance (Comstock & Paik, 1987; Fetler, 1984).
- In middle- and lower-class families, a moderate amount of television viewing (two to four hours per day) correlates with a relative increase in achievement (Fetler, 1984).
- In general, students who view a great deal of television (more than six hours of television per day) have significantly lower achievement scores in reading, writing, and mathematics than children who watch less than six hours per day (Fetler, 1984), and small amounts of viewing (two to three hours per day) may increase achievement for disadvantaged children (Fetler, 1984; National Assessment of Educational Progress, 1982, cited in Searls et al., 1985; Williams et al., 1982).

The extensive National Assessment of Educational Progress study (cited in Searls et al., 1985) found that effects of television viewing may depend on children's age:

- For younger children, up to four hours per day may have a positive effect on achievement;
- Nine-year olds' achievement increases as television viewing approaches three to four hours per day;
- Thirteen-year olds' optimal amount of viewing is reported as one to two hours; and
- Around age 17 the effects of television viewing become directly negative. As homework demands increase, television viewing needs to decrease to ensure an adequate amount of time for reading and studying (Keith, Reimers, Fehrman, Pottebaum, & Aubey, 1986).

In summary, children who come from a family environment characterized by a "press for achievement," a term used to describe a family environment that emphasizes achievement and intellectual pursuits (e.g., Marjoribanks, 1980), tend to get higher grades and perform better on achievement tests. Parents encourage academic and intellectual pursuits by structuring children's time for homework completion, encouraging verbal conversations, modeling reading and learning, encouraging children to read at home, and limiting television viewing so the child can participate in other educationally related activities. Those parental activities have been referred to as "structure for learning" (Christenson, Rounds, & Gorney, 1992).

A family environment that structures learning is related to student grades and achievement (Bing, 1963; Clark, 1983; Kurdek & Sinclair, 1988; Marjoribanks, 1980; Sloane, 1991; Watson, Brown, & Swick, 1983). The findings generalize across SES boundaries. Most investigations of structure for learning have studied elementary students. Sample sizes are large and include students from varied ethnic backgrounds and SES levels. Dependent measures include grades, standardized achievement tests, teacher ratings, and competency testing. A limitation of the dependent measures for some studies is the use of student self-report for grades and television viewing time.

Parent-Child Interaction

The degree to which the parent-child relationship is characterized by the parental acceptance, nurturance, encouragement, involvement, and emotional responsiveness to the child's needs is examined most often with younger children for whom academic achievement is not an issue. Although preschool to sixth graders are studied, most studies focus on early education students. Some studies have included African-American children and children with learning disabilities; most have focused on Caucasian children and children without disabilities. Sample sizes are generally moderate and correlational studies are common. Studies using longitudinal and time-lag correlational designs were found. Dependent measures include standardized achievement tests and parent rating of children's current and expected performance. Affective relationships are measured through observation or interviews concerning parent-child interaction, and can be thought of as the emotional environment in the home.

A positive affective relationship between parents and children increases the likelihood that the child will initiate and persist in challenging intellectual tasks (Estrada, Arsenio, Hess, & Holloway, 1987) and be socially competent (Bretherton, 1985). Maternal qualities that positively affect student cognitive growth and motivation to achieve include reinforcement, consultation with the child, and sensitivity to the child's needs (Radin, 1971). Parent behaviors related to cognitive development are amount of interaction, providing support in problem-solving activities, and allowing children to explore (Ferguson, 1987; Portes et al., 1984). Mothers of children with learning disabilities should be particularly aware of how their affective responses are influencing their children. Research indicates that these mothers view their children's successes less positively and failures more negatively than mothers of children without disabilities (Chapman & Boersma, 1979; Pearl & Bryan, 1982). Failure of these children is more often attributed to ability than "luck" (Pearl & Bryan, 1982; Tollison et al., 1987).

Early parent-child relationships as well as relationships during the school years have an impact on later school achievement (Bradley & Caldwell, 1976, 1984; Erickson & Pianta, 1989; Estrada et al., 1987; Ferguson, 1987; Hess, Holloway, Dickson, & Price, 1984; MacPhee, Ramey, & Yeates, 1984; Radin, 1971). These effects appear to be unrelated to IQ, SES status, or gender of the child (Estrada et al., 1987). Infant attachment appears to be related to success in school: Children who have an anxiously attached relationship with their caregiver are at risk for problems with school transitions, and securely attached infants tend to be more successful in school and to cope better with the separation upon entering school (Erickson & Pianta, 1989).

In summary, a positive parent-child relationship is related to academic success. Parents who accept, nurture, encourage, and are emotionally responsive to their children's developmental needs tend to have children who are successful in school. This affective relationship is not associated with IQ, SES, or gender of the child.

Discipline

Discipline refers to parenting methods used to control children's behavior. Researchers identified three general parenting styles:

- Authoritative,
- Permissive, and
- Authoritarian (Baumrind, 1966).

Authoritative discipline involves setting clear standards, enforcing rules, and encouraging discussion and independence. Permissive parents make few demands, whereas authoritarian parents tend to demand obedience. Authoritarian parents do not encourage children to learn how to make decisions and solve problems on their own, and they are unresponsive to children's input. Most studies have investigated the effects of discipline on high school students, although some studies have included preschoolers. Subjects represent different ethnic backgrounds, and sample sizes range from small to very large. Correlational studies are common. Dependent measures include standardized tests, and self-reported and actual school grades.

Authoritative characteristics are positively associated with student achievement, whereas authoritarian and permissive parenting styles are negatively correlated with student achievement (Baumrind, 1966; Dornbusch et al., 1987; Portes, Dunham & Williams, 1986).

CASE STUDY

Steinberg, Elmen, and Mounts (1989) investigated over time the relation between three aspects of authoritative parenting—acceptance, psychological autonomy, and behavioral control—and school achievement in a sample of 120 ten- to sixteen-year olds.

They found that authoritative parenting facilitates adolescents' school success. Adolescents who describe their parents as treating them warmly, democratically, and firmly were more likely than their peers to develop positive attitudes toward and beliefs about their achievement, and as a consequence, were more likely to do better in school. All three aspects of authoritative parenting contributed to the adolescents' school success.

Adolescents' participation in decision making within the family is a line of research that relates parenting style to student achievement. Dornbusch and colleagues found that shared responsibility (between parent and adolescent) for decisions was associated with higher grades; this type of decision making is also associated with an authoritative parenting style (Dornbusch, Ritter, Mont-Reynaud, & Chen, 1990). Students who make decisions on their own tend to have lower grades; this type of decision making is associated with the permissive parenting style. Parents controlling all decisions had no association with grades; this type of decision making is associated with the authoritarian style of parenting. The researchers concluded that it is better to err on the side of too much parent control since granting autonomy too early appears to correlate negatively with school accomplishments.

Portes et al. (1986), however, found that permissiveness was positively correlated with scores on the California Test of Basic Skills, although they question the appropriateness of the measure. Differences may be accounted for in part by the dependent measures, grades, or test scores.

CASE STUDY

Keith (1991) investigated the effects of parental involvement on high school seniors' achievement, as measured by test scores and student grades. He found that parent involvement had a consistent, positive effect on students' grades but no meaningful effect on students' standardized achievement test scores.

Specific parental behaviors such as encouragement, restrictiveness, and participation in decision making have been studied in relation to student school performance. Radin (1972) found that restrictiveness at four years was significantly negatively correlated with IQ. In a study of high- and under-achieving high school boys, the high achievers described their parents as being less restrictive in comparison to the under-achieving group (Morrow & Wilson, 1961). High-achievers reported receiving more encouragement from their parents than the under-achievers.

In their study of high school students, Dornbusch and Ritter (1992) report that parental encouragement is associated positively with academic performance if the student is doing reasonably well in school. The following parental behaviors were not associated with improvements in academic performance:

- Punishment,
- Reward,
- Expression of negative emotion, or
- Uninvolvement.

Effects of parenting styles vary as a function of student gender and ethnicity:

- In Asian families, the authoritative and permissive parenting styles are not associated with achievement and the impact of the authoritarian style appears to be less negative (Dornbusch et al., 1987; Dornbusch & Ritter, 1992).
- In Hispanic families, the authoritarian parenting style was unrelated to male child achievement, but had a strong negative correlation with female child achievement (Dornbusch & Ritter, 1992).

Recent research conducted by Steinberg, Mounts, Lamborn, and Dornbusch (1991) indicates that positive correlates of authoritative parenting transcend ethnicity, SES, and family structure. Regardless of their ethnicity, class, or parents' marital status, adolescents who describe their parents as accepting, firm, and democratic earn higher grades in school. In addition, the students are more self-reliant, report less depression and anxiety, and are less likely to engage in delinquent behavior.

A major limitation in this area is lack of studies that link parent discipline styles to achievement. Many studies examine child outcome variables such as aggression, self-esteem, hostility, defiance, and withdrawal (Rutter, 1985; Wells, Forehand, & Griest, 1980). The work by researchers at the Oregon Social Learning Center, although focused on the development of antisocial behavior, is relevant. Patterson (1982) found that parents of children with antisocial behavior react aversively to their children's behavior, use much negative reinforcement, and engage in a pattern of negative interaction. He referred to the pattern of interaction between parent and child as "coercive family process," because both the parent and child are in a coercive rut that prevents the positive socialization of the child.

Antisocial behavior in the home accounts for 50% of the variance in measures of antisocial behavior at school, and is correlated with low rates of academic engagement, poor academic performance, conduct problems, and poor homework completion (Patterson, Capaldi, & Bank, in press; Walker, Shinn, O'Neill, & Ramsey, 1987; both cited in Reid & Patterson, 1990).

In summary, parental discipline characterized by setting clear standards, enforcing rules, and encouraging discussion, negotiation, and independence is associated with positive academic outcomes and adolescent behavior.

Over- and under-control are correlated negatively with student achievement.

Home Learning Activities

Many studies that examine effects of home learning activities are concerned with reading activities. These activities take the form of parents encouraging children to read, children reading to their parents, or parents reading to their children. It appears that home reading activities increase reading achievement (Becher, 1984; Goldenberg, 1987; Hannon, 1987; Searls, Lewis, & Morrow, 1982; Shuck, Ulsh, & Platt, 1983). Studies indicate that children whose parents read to them on a regular basis (at least four times per week) for as little as ten minutes are higher achievers in reading than are children whose parents do not read to them (Hoskins, 1976; Romotowski & Trepanier, 1977).

Parent-child interactive practices during reading may be beneficial. Some studies show that parents who initiate discussion with their children about the books they read together had children with higher reading achievement, particularly better reading comprehension than children whose parents did not engage in these talks (Snow, 1983; Teale, 1978).

CASE STUDY

In a project that included specific guidelines for parents on how to listen to their child read:

- **Accuracy was improved and parents noted an increase in enthusiasm for reading, more attention to mechanical detail, and an overall increase in fluency.**
- **However, no differences were found in rate, comprehension, and receptive vocabulary (Portsmouth, Wilkins, & Airey, 1985).**

In another study, children reading to parents produced more improvement in reading skills than did small group instruction (Tizard, Schofield, & Hewison, 1982). These children lived in multi-ethnic areas where many parents were non-English literate. Children who read to parents, including those who were having difficulty learning to read, made significantly greater progress than those who did not read at home to parents. The findings are striking because gains were made by children regardless of ability and social class.

Achievement gains have also been demonstrated with home learning activities in subjects other than reading (Epstein, 1986; McKinney, 1975; Mullen, 1989; Searls et al., 1982). Parent involvement in home learning activities has been shown to yield positive effects on communication between home and school, and parents' attitude toward the school (Hannon, 1987; Searls et al., 1982; McKinney, 1975). Positive effects of home learning activities can be found with children of all abilities and from all social classes (Searls et al., 1982).

In summary, correlates of positive academic outcomes for students are high, realistic parental expectations for school performance, parents' use of effort attributions for school performance, parents' structure and support for learning in the home, positive emotional interaction between parents and children or parents' emotional responsiveness to children's developmental needs, parents' use of an authoritative parenting style, and parent involvement in education at school and home. In general, findings in each area are consistent and of a sufficient magnitude to be considered meaningful. We contend that parent involvement in home learning activities that support school instruction is a strong, significant correlate of academic outcomes for students.

Home-School Collaboration

There is a strong belief that educators need to do more to involve parents in education. Epstein (1986) found that parents had overwhelmingly positive attitudes toward public schools; 90% of parents believed that their child's school was well run and most parents felt comfortable at their child's school. At the same time, many parents believed teachers could do more to get parents involved in learning activities at home. They thought teachers should try to involve parents, and 80% of the parents believed they could spend more time helping their child if they were shown how.

CASE STUDY

Similar results were revealed in a later survey conducted by Dauber and Epstein (1989) who showed that parents in an inner-city school wanted teachers to help them help their child at home and give them more information about their child's curriculum:

- **Most doubt their own ability to help their child but still express a desire to help.**
- **Parents also identified that at times, children's homework was beyond their understanding even when they wanted to understand (Leitch & Tangri, 1988).**

Many parents communicate that they do not enjoy coming to school—often stating that they have bad memories of school and feel intimidated when discussing school issues with school personnel. Some of these parents report that they have low expectations for themselves and for their children. A large majority of these parents report that they are satisfied with their children's school experiences even though their children are not experiencing success (Davies, 1989).

Parents' and teachers' perceptions of each other have contributed to individuals encouraging schools to move beyond rhetoric. Major reports on schooling, A Nation at Risk (National Commission on Excellence in Education, 1983) and Turning Points (Carnegie Council on Adolescent Development, 1989), emphasize the role of parents in making education work, but Davies (1991) delineates the need for schools to reach out to families who live under stress because of economic hardship or barriers of language and social custom. Parents of all SES and educational backgrounds can be involved productively (Dauber & Epstein, 1989; Epstein, 1986). Epstein (cited in Olson, 1990) contends that "a relatively small percentage of parents have personal problems so severe that they cannot work cooperatively with teachers, given the proper assistance" (p. 22).

In her investigation of the relationship between schools and families in four school systems, Lindle (1989) showed that parents want a person-to-person relationship, not a "professional-client" relationship with schools. Parents desire opportunities to dialogue with educators about their children's education, opportunities to share perceptions about their child with educators, and provision of timely information about their child's school performance on an informal basis. Parents indicated a dissatisfaction with school personnel who are "too business-like," "patronizing," or "who talk down" to them. Lindle found that parents believed a personal touch from a teacher was the most important factor in encouraging their involvement with and support of schools. Her finding that parents want to be equal partners in the education of their children is supported by parents who have children with special needs. Peterson and Cooper (1989) described the values and concepts that lie at the heart of true parent-professional teamwork for children with disabilities:

> *(1) active, sensitive listening to what parents say about their own needs and desires; (2) respectful acceptance of what parents say about their own values, needs, and desires concerning education and treatment of their [disabled] child; (3) an attitude of partnership manifest through joint sharing, planning, and decision making; (4) alterative options for parents; (5) equal importance given to roles played by each party; (6) individualization and flexibility of parent and family services and parent involvement; (7) respect for the parameters of parenting responsibilities and the prerogatives of parents to control their own lives; (8) open, reciprocal, and honest communication; and (9) fair, appropriate distribution of decision-making powers among parents and professionals (p. 232).*

Guidelines for Increasing Home Support for Classroom Instruction

The following guidelines are drawn from the home-school partnership literature. Rich (1987) has shown that the focus of parent-educator interaction should be child-focused. Parent participation is increased and maintained when parents view their involvement as directly linked to the performance of their children. **Thus, it is important for educators to invite parents to help increase the success of their child's school performance.**

Second, **it is important to listen and communicate with parents.** Parents frequently report having little or no communication with school personnel. When they do hear from educators, parents report that the communication is primarily negative and concerns problems at school (Davies, 1989). The major function of many of the school-to-parent contacts was to share negative information about behavior, attendance, academic performance, and monitoring of children's progress. Often no intervention plan for the behavior of concern was developed (Leitch & Tangri, 1988). It is important to keep the conversation directed toward "solutions" for their children.

CASE STUDY

In their study of home-school communication, Tangri and Leitch (1982) report that both parents and teachers recognize that the majority of communication between them is negative—teacher messages about poor student performance and parent complaints regarding events in the school.

Third, **perspective-taking is essential.** It appears that when there is little or no communication between parents and teachers, both parties interpret the others' lack of availability as a signal of their lack of concern for the child. As a result, the other is seen as the enemy. In reality, teachers and parents of today's society alike are feeling stressed by multiple demands of their professional, family, and individual responsibilities, and the limited time that results (Swap, 1987). From parents' perspectives, there are many factors that prevent or limit productive involvement in their children's education. These factors may include:

- Lack of time,
- Minimal opportunities for involvement,
- Job or family demands,
- Different cultural backgrounds,
- Family health problems,
- Work schedules,
- Demands of families with small children,
- Receiving only "bad" news from school,
- Fears for their safety,
- Late notices of meetings,
- Not understanding the work their children bring home, and
- Feeling unwelcome by the schools (Becker & Epstein, 1982; Tangri & Leitch, 1982; Moles, 1982).

Many of the barriers to home-school partnerships are characteristic of exosystem and macrosystem influences (Bronfenbrenner, 1979).

A criticism of parent involvement efforts that consistently surfaces from school personnel is that even when parents are given opportunities to become involved in children's education, some parents still choose not to be involved. These parents are often labeled by school people as "hard-to-reach" and receive little encouragement to become involved in their children's education (Heleen, 1989). Teachers and administrators often assume that these parents are either too lazy, incompetent, or preoccupied to participate in school programs. They believe that low-income parents do not value or have little to offer to the education of their children (Davies, 1989). While teachers commonly hold these beliefs, very few of these beliefs are actually valid and substantiated. The most common explanation teachers had for parent noninvolvement was the parents' high work demands.

CASE STUDY

- **Research results, however, have demonstrated that working parents were just as involved as nonworking parents (Leitch & Tangri, 1988).**
- **Teachers attributed low parent involvement to parents who were less well and highly educated, and to parents who were more financially stressed and secure.**

Leitch and Tangri (1988) conclude from their study that noninvolved parents exemplify not a few but a range of parental characteristics. They also conclude that teachers' unsubstantiated assumptions of parents who are noninvolved negatively influence home-school relations. These assumptions lead to bitter confrontations about children's academic and behavioral problems, cause distrust and alienation, and only contribute to the alienation felt between parents and school people (Comer, 1984; Lareau, 1987; Smrekar, 1989; Swap, 1987). Parents identified by school personnel as being "hard-to-reach" do not feel they are "hard-to-reach" and state that they will come to school if there are good reasons to do so. Heleen (1989) suggested that from the perspective of low-income parents, the problem can be seen more as the school being "hard-to-reach" rather than the parent.

Fourth, in order to foster mutually supportive families and schools, **everyone must share in the responsibility and avoid shifting the blame for children's problems on others**. School personnel, parents, and students must be willing to work together toward a common goal to effectively change old attitudes and habits (Seeley, 1989). Seeley (1984) suggested that unproductive relationships result because schools do not take into account the variety of relationships and needs of students and their families. He states that educators must be committed to supporting, communicating, valuing, and listening to all parents.

Parents and educators must use the elements of collaborative relationships. These include:

- Mutual respect for skills and knowledge,
- Honest and clear communication,
- Two-way sharing of information,
- Mutually agreed-upon goals, and
- Shared planning and decision making (Vosler-Hunter, 1989).

The salient word is reciprocity. Home-school collaboration focuses on the relationship between home and school and how parents and educators work together to promote the academic and social development of children.

Although home-school collaboration implies parent involvement, the reverse is not always true. Home-school collaboration implies that there is a partnership between the two systems and that both systems are working toward a common goal. The underlying philosophy of home-school collaboration is the recognition that two systems working together can accomplish more than either system can accomplish separately, and that both parents and educators have legitimate roles and responsibilities in the partnership. The activity in which parents and teachers are involved does not distinguish home-school collaboration from parent involvement. Rather, it is the philosophy of partners working toward a common goal with respect for each partner's contributions.

Fifth, **educators need to provide assistance and support recommendations**. A factor influencing communication between parents and school people is the diversity of parent characteristics and needs of parents. Epstein (1987b) suggests that parents differ dramatically in their knowledge of how to help children at home, their beliefs that teachers want them to help their children at home, and the degree of information and guidance they receive from their children's teachers in how to help their children at home. Teachers may use educational language that is foreign to parents, place unrealistic expectations on parents, or may not be sensitive to how parents are understanding the information communicated. Differences in parent characteristics and educators' sensitivity to parents' differential needs directly influence the amount and manner in which parents become involved in their children's education.

In summary, parents can be involved in their child's schooling without collaborating with educators. Home-school collaboration is an attitude not an activity, and occurs when partners (parents and educators) share common goals and responsibilities, are seen as equals, and contribute to the collaborative process. We believe that most parents will feel empowered to support their child's learning if educators recognize the importance of and model mutual respect, critical reflection, caring, group participation, and collaborative problem solving to address students' difficulties.

REFERENCES

Algozzine, K., Morsink, C., & Algozzine, B. (1986). Classroom ecology in categorical special education classrooms. And so, they counted the teeth in the horse. *Journal of Special Education, 20,* 209-217.

Allington, R., Stuetzel, H., Shake, J., & Lamarche, S. (1984). *What is remedial reading? A descriptive study.* Unpublished manuscript.

American Educational Research Association, American Psychological Association, National Council on Measurement in Education. (1985). *Standards for educational and psychological testing.* Washington, DC: American Psychological Association.

Anastasi, A. (1976). *Psychological testing* (4th ed.). New York: Macmillan.

Anderson, L.W. (1984a). Instruction and time-on-task: A review. In L.W. Anderson (Ed.), *Time and school learning* (pp. 143-163). New York: St. Martin's Press.

Anderson, L.W. (Ed.). (1984b). *Time and school learning.* New York: St. Martin's Press.

Anderson, L.W. (1985a). What are students doing when they do all that seatwork? In C.W. Fisher & D. Berliner (Eds.), *Perspectives on instructional time* (pp. 189-202). New York: Longman.

Anderson, L.W. (1985b). Concerns for appropriate instrumentation in research on classroom teaching. *Evaluation in Education, 8*(2), 133-152.

Anderson, L., Evertson, C., & Brophy, J. (1979). An experimental study of effective teaching in first-grade reading groups. *Elementary School Journal, 79,* 193-223.

Anderson, L., Evertson, C., & Emmer, E. (1980). Dimensions in classroom management derived from recent research. *Journal of Curriculum Studies, 12,* 343-356.

Anderson, L.W. & Scott, C.C. (1978). The relationship among teaching methods, student characteristics, and student involvement in learning. *Journal of Teacher Education, 29*(3), 52-57.

Anderson, R.N., Greene, M.L., & Loewen, P.S. (1988). Relationships among teachers' and students' thinking skills, sense of efficacy, and student achievement. *Alberta Journal of Educational Research, 34,* 148-165.

Arlin, M. & Webster, J. (1983). Time costs of mastery learning. *Journal of Educational Psychology, 75,* 187-195.

Armor, D., Conroy-Oseguera, P., Cox, M., King, N., McDonnel, L., Pascal, A., Pauley, E., & Zellmen, G. (1976). *Analysis of the school preferred reading program in selected Los Angeles minority schools.* Santa Monica, CA: Rand Corporation. (ERIC Document Reproduction Service No. ED 130-243)

Ashton, P.T. & Webb, R.B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement.* New York: Longman.

Ashton, P., Webb, R., & Doda, N. (1983). A study of teachers' sense of efficacy (Final Report, National Institute of Education Contract No. 400-79-0075). Gainesville, FL: University of Florida. (ERIC Document Reproduction Service No. ED 231834)

Bandura, A. (1978). The self system in reciprocal determinism. *American Psychologist, 33,* 344-358.

Bandura, A. (1981). Self-referent thought: A developmental analysis of self-efficacy. In J. Flavell & L. Ross (Eds.), *Social cognitive development: Frontier and possible futures* (pp. 200-239). Cambridge, MA: Cambridge University Press.

Barber, C. (1979). Training principals and teachers for mastery learning. *Educational Leadership, 37*(2), 126-127.

Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development, 37,* 887-907.

Becher, R.M. (1984). *Parent involvement: A review of research and principles of successful practice.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED 247-032)

Becker, H.J. & Epstein, J.L. (1982). *Influences on teachers' use of parent involvement at home* (Report No. 324). Baltimore, MD: Center for Social Organization of Schools.

Becker, W.C., Engelmann, S., Carnine, D.W., & Rhine, R. (1981). The direct instruction model. In R. Rhine (Ed.), *Encouraging change in America's schools: A decade of experimentation* (pp. 45-83). New York: Academic Press.

Behling, H.E. (1986). Schools and effective classrooms. *Counterpoint,* p. 13.

Bennett, N., Desforges, C., Cockburn, A., & Wilkinson, B. (1984). *The quality of pupil learning experience.* Hillsdale, NJ: Lawrence Erlbaum.

Berman, P., McLaughlin, M., Bass, G., Pauly, E., & Zellman, G. (1977) *Federal programs supporting educational change. Vol. 7: Factors affecting implementation and continuation.* Santa Monica, CA: The Rand Corporation. (ERIC Document Reproduction Service No. ED 140 432)

Bing, E. (1963). Effect of childrearing practices on development of differential cognitive abilities. *Child Development, 34,* 631-648.

Blair, T.R. (1984). Teacher effectiveness: The know-how to improve student learning. *The Reading Teacher, 38*(2), 138-142.

Bloom, B.S. (1976). *Human characteristics and student learning.* New York: McGraw-Hill.

Bloom, B.S. (1985). Learning for mastery. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 73-93). New York: Longman.

Boersma, F.J. & Chapman, J.W. (1982). Teachers' and mothers' academic achievement expectations for learning disabled children. *Journal of School Psychology, 2,* 216-225.

Borg, W.R. (1979). Teacher coverage of academic content and pupil achievement. *Journal of Educational Psychology, 71*, 633-645.

Borg, W.R. (1980). Time and school learning. In C. Derham & A. Lieberman (Eds.), *Time to learn*. Washington, DC: National Institute of Education.

Bradley, R. & Caldwell, B.M. (1976). The relation of infant's home environments to mental test performance at fifty-four months: A follow-up study. *Child Development, 47*, 1172-1174.

Bradley, R. & Caldwell, B.M. (1984). The relation of infant's home environments to achievement test performance in first grade: A follow-up study. *Child Development, 55*, 803-809.

Bradshaw, J. & Amundson, K.J. (1985). *Homework: Helping students achieve* (Report No. ISBN-0-87652-1030). Arlington, VA: American Association of School Administrators. (ERIC Document Reproduction Service No. ED 266 526)

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development, 50*, 3-35.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Brophy, J.E. (1979). Teacher behavior and its effects. *Journal of Educational Psychology, 71*, 733-750.

Brophy, J.E. (1983a). Fostering student learning and motivation in the elementary school classroom. In S.G. Paris, G.M. Olson, & H.W. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 283-305). Hillsdale, NJ: Lawrence Erlbaum.

Brophy, J.E. (1983b). Classroom organization and management. *Elementary School Journal, 83*, 254-285.

Brophy, J.E. (1986). Teacher influences on student achievement. *American Psychologist, 41*, 1069- 1077.

Brophy, J.E. & Alleman, J. (1991). Activities as instructional tools: A framework for analysis and evaluation. *Educational Researcher, 20*(4), 9-23.

Brophy, J.E. & Evertson, C.M. (1976). *Learning from teaching: A developmental perspective*. Boston, MA: Allyn & Bacon.

Brophy, J.E. & Good, T.L. (1970). Teachers' communication of differential expectations for children's classroom performance. *Journal of Educational Psychology, 61*, 365-374.

Brophy, J.E. & Good, T.L. (1986). Teacher behavior and student achievement. In M.L. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.) (pp. 328-375). New York: MacMillan.

Brown, B.B. (1968). *The experimental mind in education*. New York: Harper & Row.

Burns, R.B. (1979). Mastery learning: Does it work? *Educational Leadership*, 37(2), 110-113.

Buss, A.R. (1976). The myth of vanishing individual differences in Bloom's mastery learning. *Instructional Psychology, 3*, 4-14.

Calfee, R.C. (1981). The reading diary: Acquisition of decoding. *Reading Research Quarterly, 16*(3), 346-373.

California State Department of Education. (1980). *Student achievement in California Schools: 1979-80 annual report*. Sacramento, CA: Author.

Carlsen, W. S. (1991). Questioning in classrooms: A sociolinguistic perspective. *Review of Educational Research, 61*(2), 157-178.

Carnegie Council on Adolescent Development. (1989). *Turning points: Preparing American youth for the 21st century* (Report of the Task Force on Education of Young Adolescents). Washington, DC: Author.

Carroll, J.B. (1963). A model of school learning. *Teachers College Record, 64,* 723-733.

Carroll, J.B. (1984). Educational research: Reflections on the past. In J.B. Carroll (Ed.), *Improving education: Perspectives on educational research* (pp. 9-20). Pittsburgh, PA: National Academy of Education.

Carroll, J.B. (1985). The model of school learning: Progress of an idea. In L.W. Anderson (Ed.), *Perspectives on school learning: Selected writings of John B. Carroll* (pp. 82-108). Hillsdale, NJ: Lawrence Erlbaum.

Chan, C., Burtis, P.J., Scardamalia, M., & Bereiter, C. (1992). Constructive activity in learning from text. *American Educational Research Journal, 29,* 97-118.

Chapman, J. & Boersma, F.J. (1979). Learning disabilities, locus of control and mother attitudes. *Journal of Educational Psychology, 71,* 250-258.

Chavkin, N.F. & Williams, D.L. Jr. (1985). *Parent involvement in education project: Executive summary of the final report.* Austin, TX: Southwest Educational Development Lab. (ERIC Document Reproduction Services No. ED 266-874)

Chow, S.H.L. (1981). *A study of academic learning time of mainstreamed handicapped students.* San Francisco, CA: Far West Laboratory for Educational Research and Development.

Christenson, S.L., Rounds, T., & Franklin, M.J. (1992). Home-school collaboration: Effects, issues, and opportunities. In S.L. Christenson & J.C. Conoley (Eds.), *Home-school collaboration: Enhancing children's academic and social competence* (pp. 19-51). Silver Spring, MD: National Association of School Psychologists.

Christenson, S.L., Rounds, T., & Gorney, D. (1992). Family factors and student achievement: An avenue to increase students' success. *School Psychology Quarterly.*

Christenson, S., Ysseldyke, J.E., Wang, J.J., & Algozzine, B. (1983). Teachers' attributions for problems that result in referral for psychoeducational evaluation. *Journal of Educational Research, 76,* 174-180.

Clark, R.M. (1983). *Family life and school achievement.* Chicago: University of Chicago Press.

Clark, R.M. (1988). Parents as providers of linguistic and social capital. *Educational Horizons, 66*(2), 93-95.

Cobb, J.A. (1972). A relationship of discrete classroom behaviors to fourth-grade academic achievement. *Journal of Educational Psychology, 63,* 74-80.

Cohen, J. (1987). Parents as educational models and definers. *Journal of Marriage and the Family, 49,* 339-349.

Collins, C.H., Moles, O., & Cross, M. (1982). *The home-school connection: Selected partnership programs in large cities.* Boston, MA: Institute for Responsive Education.

Comer, J.P. (1984). Home-school relationships as they affect the academic success of children. *Education and Urban Society, 16*(3), 323-337.

Comer, J.P. (1988). Educating poor minority children. *Scientific American, 259*(5), 42-48.

Comer, J.P. & Haynes, N.M. (1991). Parent involvement in schools: An ecological approach. *The Elementary School Journal, 91*(3), 271-278.

Comstock, G. & Paik, H. (1987). *Television and children: A review of recent research* (Report No. ISBN-0-937597-12-0). (ERIC Document Reproduction Services No. ED 292-466)

Confrey, J. (1981). Subject-matter specialists. *Elementary School Journal, 82*, 88-94.

Cooley, W.W. & Leinhardt, G. (1980). The instructional dimensions study. *Educational Evaluation and Policy Analysis, 2*(1), 7-25.

Cooper, H. (1989). Synthesis of research on homework. *Educational Leadership, 47*, 85-91.

Cooper, H.M. & Good, T.L. (1982). *Pygmalion grows up*. New York: Longman.

Coulter, F. (1979). Homework: A neglected research area. *British Educational Research Journal, 5*(1), 21-33.

Curtis, M.J. & Meyers, J. (1985). Best practices in school-based consultation. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology* (pp. 79-94). Kent, OH: National Association of School Psychologists.

Dauber, S.L. & Epstein, J.L. (1989, April). *Parent attitudes and practices of involvement in inner-city elementary and middle schools*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Davies, D. (1989, April). *Poor parents, teachers, and the schools: Comments about practice, policy, and research*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Davies, D. (1991). Schools reaching out: Family, school, and community partnerships for student success. *Phi Delta Kappan, 72*(5), 376-382.

Denham, C. & Lieberman, A. (Eds.). (1980). *Time to learn*. Washington, DC: National Institute of Education.

Denham, C.H. & Michael, J.J. (1981). Teacher sense of efficacy: A definition of the construct and model for further research. *Educational Research Quarterly, 5*, 39-63.

Deno, S. & Mirkin, P. (1980). Data-based IEP development: An approach to substantive compliance. *Teaching Exceptional Children, 12*, 92-99.

Dornbusch, S.M. & Ritter, P.L. (1992). Home-school processes in diverse ethnic groups, social classes, and family structures. In S.L. Christenson & J.C. Conoley (Eds.), *Home-school collaboration* (pp. 111-125). Colesville, MD: National Association of School Psychologists.

Dornbusch, S.M., Ritter, P.L., Leiderman, P.H., Roberts, D.F., & Fraleigh, M.J. (1987). The relation of parenting style to adolescent school performance. *Child Development, 58*, 1244-1257.

Dornbusch, S.M., Ritter, P.L., Mont-Reynaud, R., & Chen, Z. (1990). Family decision-making and academic performance in a diverse high school population. *Journal of Adolescent Research, 5*(2), 143-160.

Dornbusch, S.M. & Wood, K.D. (1989). Family processes and educational achievement. In W. J. Weston (Ed.), *Education and the American family* (pp. 66-95). New York: New York University.

Doyle, W. (1983). Academic work. *Review of Educational Research, 53,* 159-199.

Doyle, W. (1986). Classroom organization and management. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 392-431). New York: Macmillan.

Duffy, G.G., Roehler, L.R., Meloth, M.S., Vavrus, L.G., Book, C., Putnam, J., & Wesselman, R. (1986). The relationship between explicit verbal explanations during reading skill instruction and student awareness and achievement: A study of reading teacher effects. *Reading Research Quarterly, 21*(3), 237-252.

Duffy, G.G., Roehler, L.R., & Rackliffe, G. (1985, April). Qualitative differences in teachers' instructional talk as they influence student awareness of lesson content. Paper presented at the American Educational Research Association, Chicago.

Dunkin, M. & Doenau, S. (1980). A replication study of unique and joint contributions to variance in student achievement. *Journal of Educational Psychology, 72,* 394-403.

Dunton, K.J., McDevitt, T.M., & Hess, R.D. (1988). Origins of mother's attributions about their daughters' and sons' performance in math in sixth grade. *Merrill Palmer Quarterly, 34,* 47-70.

Durkin, D. (1979). What classroom observation reveals about reading comprehension instruction. *Reading Research Quarterly, 14,* 481-533.

Durkin, D. (1984). Is there a match between what elementary teachers do and what basal reader manuals recommend? *The Reading Teacher, 37,* 734-745.

Dweck, C.S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology, 31,* 674-685.

Dweck, C.S., Davidson, W., Nelson, S., & Enna, B. (1978). Sex differences in learned helplessness: II. The contingencies of evaluation feedback in the classroom and III. An experimental analysis. *Developmental Psychology, 14,* 268-276.

Edmonds, R.R. (1979). Some schools work and more can. *Social Policy, 9,* 28-32.

Emmer, E.T., Evertson, C.M., & Anderson, L.M. (1980). Effective classroom management. *Elementary School Journal, 80,* 219-231.

Englert, C. (1984). Effective direct instruction practices in special education settings. *Remedial and Special Education, 5*(2), 38-47.

Englert, C.S. & Thomas, C.C. (1982). Management of task involvement in special education classrooms: Implications for teacher preparation. *Teacher Education and Special Education, 5,* 3-10.

Entwisle, D.R. & Hayduk, L.A. (1988). Lasting effects of elementary school. *Sociology of Education, 61,* 147-159.

Epstein, J.L. (1982, March). *Student reactions to teachers' practices of parent involvement.* Paper presented at the annual meeting of the American Educational Research Association, New York.

Epstein, J.L. (1985, April). *When school and family partnerships work: Implications for changing the role of teachers.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Epstein, J.L. (1986). Parents' reactions to teacher practices of parent involvement. *The Elementary School Journal, 86,* 277-294.

Epstein, J.L. (1987a). Parent involvement: What research says to administrators. *Education and Urban Society, 19,* 119-136.

Epstein, J.L. (1987b). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann, & F. Losel (Eds.), *Social intervention: Potential and constraints* (pp. 121-136). New York: deGruyter.

Epstein, J.L. (1988). Effects on student achievement of teachers' practices of parent involvement. In S. Silver (Ed.), *Literacy through family, community, and school interaction* (pp. 1-20). Greenwich, CT: JAI Press.

Epstein, J.L. & Dauber, S.L. (1991). School programs and teacher practices of parent involvement in inner-city elementary and middle schools. *The Elementary School Journal, 91*(3), 289-306.

Erickson, M.F. & Pianta, R.C. (1989). New lunchbox, old feelings: What kids bring to school. *Early Education and Development, 1*(1), 35-49.

Estrada, P., Arsenio, W.F., Hess, R.D., & Holloway, S. (1987). Affective quality of the mother child relationship: Longitudinal consequences for children's school-relevant cognitive functioning. *Developmental Psychology, 23,* 210-215.

Evertson, C.M., Anderson, C.W., Anderson, L.M., & Brophy, J.E. (1980). Relationships between classroom behaviors and student outcomes in junior high mathematics and English classes. *American Educational Research Journal, 17,* 43-60.

Evertson, C. & Emmer, E. (1982). Effective management at the beginning of the school year in junior high classes. *Journal of Educational Psychology, 74,* 485-498.

Evertson, C.M., Emmer, E.T., Sanford, J.P., & Clements, B.S. (1983). Improving classroom management: An experiment in elementary school classrooms. *Elementary School Journal, 84,* 173-188.

Fantini, M.D. (1983). From school system to educative system: Linking the school with community environments. In R.L. Sinclair (Ed.), *For every school a community* (pp. 39-56). Boston, MA: Institute for Responsive Education.

Ferguson, L.R. (1987). *Family interaction predictors of competence in late adolescence.* Paper presented at the Biennial Meeting of the Society for Research in Child Development, Baltimore, MD.

Fetler, M. (1984). Television viewing and school achievement. *Journal of Communication, 34*(2),104-118.

Fisher, C.W. & Berliner, D.C. (Eds.). (1985). *Perspectives on instructional time.* New York: Longman.

Fisher, C.W., Berliner, D.C., Filby, N.N., Marliave, R., Cahen, L.S., & Dishaw, M.M. (1980). Teaching behaviors, academic learning time, and student achievement: An overview. In C. Denham & A. Lieberman (Eds.), *Time to learn* (pp. 7-32). Washington, DC: National Institute of Education.

Foyle, H.C. (1987). *Homework: Some implications for teacher education programs.* Paper presented at the annual meeting of the Mid-Western Educational Research Association, Chicago, IL. (ERIC Document Reproduction Service No. ED 182-465)

Fraser, B.J. (1980). Research on classroom learning environments in the 1970's and 1980's. *Studies in Educational Evaluation, 6,* 221-223.

Fredrick, W.C. & Walberg, H.J. (1980). Learning as a function of time. *The Journal of Educational Research, 73,* 183-194.

Fuchs, L.S., Deno, S.L., & Mirkin, P.K. (1984). The effects of frequent curriculum-based measurement and evaluation of pedagogy, student achievement, and student awareness of learning. *American Educational Research Journal, 21,* 449-460.

Fuchs, L.S., Fuchs, D., & Deno, S.L. (1985). Importance of goal ambitiousness and goal mastery to student achievement. *Exceptional Children, 52,* 63-71.

Fuchs, L.S., Fuchs, D., & Warren, L.M. (1982). *Special education practice in evaluating student progress toward goals* (Research Report No. 81). Minneapolis, MN: University of Minnesota, Institute for Research on Learning Disabilities.

Gagne, R.M.(1977). *The conditions of learning* (3rd ed.). New York: Holt, Rinehart, & Winston.

Gagne, R.M. & Dick, M. (1983). Instructional psychology. *Annual Review of Psychology, 34,* 261-295.

Gersten, R. (1985). Direct instruction with special education students: A review of evaluation research. *Journal of Special Education, 19*(1), 41-50.

Gersten, R., Woodward, J., & Darch, C. (1986). Direct instruction: A research-based approach to curriculum design and teaching. *Exceptional Children, 53*(1), 17-31.

Gettinger, M. (1984a). Individual differences in time needed for learning: A review of the literature. *Educational Psychologist, 19,* 15-29.

Gettinger, M. (1984b). Measuring time needed for learning to predict learning outcomes. *Exceptional Children, 51,* 244-248.

Gettinger, M. (1984c). Achievement as a function of time spent in learning and time needed for learning. *American Educational Research Journal, 21,* 617-628.

Gettinger, M. (1988). Analogue assessment: Evaluating academic abilities. In E.S. Shapiro & T.R. Kratochwill (Eds.), *Behavioral assessment in schools* (pp. 247-289). New York: Guilford Press.

Gettinger, M. & Lyon, M.A. (1983). Predictors of the discrepancy between time needed and time spent in learning among boys exhibiting behavior problems. *Journal of Educational Psychology, 75,* 491-499.

Gibson, S. & Dembo, M.H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*(4), 569-582.

Gigliotti, R.J. & Brookover, W.B. (1975). The learning environment: A comparison of high and low achieving elementary schools. *Urban Education, 10,* 245-261.

Gillum, R.M. (1977). *The effects of parent involvement on student achievement in three Michigan performance contracting programs.* Paper presented at the annual meeting of the American Education Research Association. (ERIC Document Reproduction Service No. ED 144-007)

Goldenberg, C. (1987). Low-income Hispanic parents' contributions to their first grade children's word-recognition skills. *Anthropology and Education Quarterly, 18*(3), 149-179.

Goldenberg, C. (1993). Instructional conversations: Promoting comprehension through discussion. *The Reading Teacher, 46*(4), 316-326.

Good, T.L. (1983). Classroom research: A decade of progress. *Educational Psychologist, 18*(3), 127-144.

Good, T.L. & Brophy, J.E. (1984). *Looking in classrooms* (3rd ed.). New York: Harper & Row.

Good, T.L. & Brophy, J.E. (1986). School effects. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.) (pp. 570-602). New York: MacMillan.

Good, T., Ebmeier, H., & Beckerman, T. (1978). Teaching mathematics in high and low SES classrooms: An empirical comparison. *Journal of Teacher Education, 29*, 85-90.

Good, T. & Grouws, D. (1979). The Missouri mathematics effectiveness project: An experimental study in fourth-grade classrooms. *Journal of Educational Psychology, 71*, 355-362.

Good, T., Grouws, D., & Beckerman, T. (1978). Curriculum pacing: Some empirical data in mathematics. *Journal of Curriculum Studies, 10*, 75-81.

Gordon, C. & Pearson, P.D. (1983). *The effects of instruction in metacomprehension and inferencing on children's comprehension abilities* (Tech. Rep. No. 277). Urbana, IL: University of Illinois, Center for the Study of Reading.

Gordon, I.J. (1978, March). *What does research say about the effects of parent involvement on schooling?* Paper presented at the annual meeting of the Association for Supervision and Curriculum Development, San Francisco.

Graden, J., Thurlow, M.L., & Ysseldyke, J. (1982). *Academic engaged time and its relationship to learning: A review of the literature* (Monograph No. 17). Minneapolis, MN: University of Minnesota, Institute for Research on Learning Disabilities.

Graue, M.E., Weinstein, T., & Walberg, H.J. (1983). School-based home instruction and learning: A quantative analysis. *Journal of Educational Research, 76*(6), 351-360.

Greenwood, C.R. (1991). Longitudinal analysis of time, engagement, and achievement in at-risk and non at-risk students. *Exceptional Children, 57*, 521-535.

Greenwood, C.R., Delquadri, J., & Hall, R.V. (1984). Opportunity to respond and student academic performance. In W.L. Heward, T.E. Heron, J. Trap-Porter, & D.S. Hill (Eds.), *Focus on behavior analysis in education* (pp. 58-88). Columbus, OH: Charles Merrill.

Guskey, T.R. (1981). Measurement of the responsibility teachers assume for academic successes and failures in the classroom. *Journal of Teacher Education, 32*(3), 44-51.

Guzzetti, B.J. & Marzano, R.J. (1984). Correlates of effective reading instruction. *The Reading Teacher, 37*(8), 754-758.

Hannon, P. (1987). A study of the effects of parental involvement in the teaching of reading on Children's Reading Test performance. *British Journal of Educational Psychology, 57*, 56-72.

Hansen, D.A. (1986). Family-school articulations: The effects of interaction rule mismatch. *American Educational Research Journal, 23*(4), 643-659.

Hansen, J. (1981). The effects of inference training and practice on young children's reading comprehension. *Reading Research Quarterly, 16*, 391-417.

Haring, N.G. & Eaton, M.D. (1978). Systematic instructional procedures: An instructional hierarchy. In N.G. Harris, T.C. Lovitt, M.D. Eaton, & C.L. Hanson (Eds.), *The fourth R: Research in the classroom* (pp. 25-40). Columbus, OH: Charles E. Merrill.

Harnischfeger, A. & Wiley, D. (1976). The teaching-learning process in elementary schools: A synoptic view. *Curriculum Inquiry, 6*, 6-43.

Harnischfeger, A. & Wiley, D. (1985). Origins of active learning time. In C. Fisher & D. Berliner (Eds.), *Perspectives on instructional time* (pp. 133-156). New York: Longman.

Harris, J.R. (1983). Parent-aided homework: A working model for school personnel. *School Counselor, 31,* 171-176.

Hartley, J. & Davies, I.K. (1976). Preinstructional strategies: The role of pretests, behavioral objectives, overviews and advance organizers. *Review of Educational Research, 46,* 239-265.

Haynes, M.C. & Jenkins, J.R. (1986). Reading instruction in special education resource rooms. *American Educational Research Journal, 23,* 161-190.

Haynes, N.M., Comer, J.P., & Hamilton-Lee, M. (1989). School climate enhancement through parental involvement. *Journal of School Psychology, 27,* 87-90.

Heleen, O. (1989). Involving the "hard to reach" parent: A working model. *Equity and Choice, 4,* 60-63.

Heller, K.A., Holtzman, W., & Messick, S. (1982). *Placing children in special education: A strategy for equity.* Washington, DC: National Academy Press.

Henderson, A.T. (1988, October). Parents are a school's best friend. *Phi Delta Kappan,* 148-153.

Henderson, A.T. (1989). *The evidence continues to grow: Parent involvement improves student achievement.* Columbia, MD: National Committee for Citizens in Education.

Hess, R.D. & Holloway, S.D. (1984). Family and school as educational institutions. In R.D. Parke, R.M. Emde, H.P. McAdoo, & G.P. Sackett (Eds.), *Reviewing child development research: Vol. 7: The family* (pp. 179-222). Chicago: University of Chicago Press.

Hess, R.D., Holloway, S.D., Dickson, W.P., & Price, G.G. (1984). Maternal variables as predictors of children's school readiness and later achievement in vocabulary and mathematics in sixth grade. *Child Development, 55,* 1902-1912.

Hess, R.D., Holloway, S.D., Price, G.G., & Dickson, W.P. (1982). Family environments and acquisition of reading skills: Toward a more precise analysis. In L.M. Laosa & I. Siegel (Eds.), *Families as learning environments for children* (pp. 87-113). New York: Plenum.

Holloway, S.D. (1986). The relationship of mothers' beliefs to children's mathematics achievement: Some effects of sex differences. *Merrill-Palmer Quarterly, 32*(3), 231-250.

Hoskins, K. (1976). *Effects of home reading experiences on academic reading for kindergarten children.* Unpublished doctoral dissertation, University of Missouri, Columbia.

Howell, K.W. (1986). Direct assessment of academic performance. *School Psychology Review, 15*(3), 324-335.

Hunt, J. Mcv. (1961). *Intelligence and experience.* New York: Ronald Press.

Hunter, M. & Russell, D. (1981). Planning for effective instruction: Lesson design. In *Increasing your teaching effectiveness* (pp. 23-41). Palo Alto, CA: The Learning Institute.

Johnson, D., Breckenridge, J., & McGowan, R. (1984). Home environment and early cognitive development in Mexican-American children. In A.W. Gottfried (Ed.), *Home environment and cognitive development: Longitudinal research* (pp. 151-196). Orlando, FL: Academic Press.

Johnson, D.W. & Johnson, R.T. (1986). Mainstreaming and cooperative learning strategies. *Exceptional Children, 52,* 553-561.

Johnson, D.W., Maruyama, G., Johnson, R., Nelson, D., & Skon, L. (1981). The effects of cooperative, competitive, and individualistic goal structures on achievement: A metaanalysis. *Psychological Bulletin, 89,* 47-62.

Johnson, F.L., Brookover, W.B., & Farrell, W.C. (1989, April). *The effects of principals', teachers', and students' perceptions of parents' role, interest and expectation for their children's education on student academic achievement.* Paper presented at the American Educational Research Association Annual Meeting, San Francisco, CA.

Jones, P.A. (1972). Home environment and the development of verbal ability. *Child Development, 43,* 1081-1086.

Kagan, D.M. (1992). Implications of research on teacher beliefs. *Educational Psychologist, 27*(1), 65-90.

Kagan, S.L. (1984). *Parent involvement research: A field in search of itself* (Report No. 8). Boston, MA: Institute for Responsive Education.

Kagan, S.L. & Schraft, C.M. (1982). *When parents and schools come together: Differential outcomes of parent involvement in urban schools.* Boston, MA: Institute for Responsive Education. (ERIC Document Reproduction Services No. ED 281-951)

Karweit, N.L. (1983). *Time on task: A research review* (Report No. 332). Baltimore, MD: Center for Social Organization of Schools, Johns Hopkins University.

Karweit, N.L. (1985). Should we lengthen the school term? *Educational Researcher, 14*(6), 9-15.

Katims, M. (1979). Unsystematic observations on success. *Educational Leadership, 37,* 118-123.

Keith, T.Z. (1987). Homework. In A. Thomas & J. Grimes (Eds.), *Children's needs: Psychological perspectives* (pp. 275-282). Washington, DC: The National Association of School Psychologists.

Keith, T.Z. (1991). Parent involvement and achievement in high school. In S.B. Silvem (Ed.), *Advances in reading/language research: Vol. 5. Literacy through family, community, and school interaction* (pp. 125-142). Greenwich, CT: JAI Press.

Keith, T.Z., Reimers, T., Fehrman, P.G., Pottebaum, S.M., & Aubey, L.W. (1986). Parental involvement, homework, and TV time: Direct and indirect effects on high school achievement. *Journal of Educational Psychology, 78,* 373-380.

Kerman, S. (1982). *Teacher expectations and student achievement.* Workshop Handout: TESA Training.

Kounin, J.S. (1970). *Discipline and group management in classrooms.* New York: Holt, Rinehart, & Winston.

Kounin, J.S. & Gump, P.V. (1974). Signal systems of lesson settings and the task-related behavior of preschool children. *Journal of Educational Psychology, 66,* 554-562.

Kratochwill, T.R. & Bergan, J.R. (1990). *Behavioral consultation in applied settings: An individual guide.* New York: Prenum Press.

Kurdek, L.A. & Sinclair, R.J. (1988). Relation of eighth-graders' family structure, gender, and family environment with academic performance and school behavior. *Journal of Educational Psychology, 80,* 90-94.

Lareau, A. (1987). Social class differences in family-school relationships: The importance of cultural capital. *Sociology of Education, 66,* 70-74.

Larrivee, B. & Algina, J. (1983). *Identification of teaching behaviors which predict success for mainstreamed students*. Paper presented at the annual meeting of American Educational Research Association.

Lazar, I. (1978). *Summary: Lasting effects after preschool*. Consortium for Longitudinal Studies, Cornell University. (ERIC Document Reproduction Service No. 175-523)

Leach, D.J. & Ingram, K.L. (1989). The effects of information and feedback on teachers' classroom behavior and students' academic engaged time. *Educational Psychologist, 9*, 167-184.

Learning Styles. (1979). [Entire Issue] *Educational Leadership, 4*.

Leinhardt, G. (1978). Applying a classroom process model to instructional evaluation. *Curriculum Inquiry, 8*(2), 155-176.

Leinhardt, G., Zigmond, N., & Cooley, W.W. (1981). Reading instruction and its effects. *American Educational Research Journal, 18*, 343-361.

Leitch, L.M. & Tangri, S.S. (1988). Barriers to home-school collaboration. *Educational Horizons, 66*, 70-74.

Leler, H. (1983). Parent education and involvement in relation to the schools and to parents of school-aged children. In R. Hoskins & D. Adamson (Eds.), *Parent education and public policy* (pp. 141-180). Norwood, NJ: Ablex.

Levine, D.U. & Stark, J. (1982). Instructional and organizational arrangements that improve achievement in inner-city schools. *Educational Leadership, 40*, 41-47.

Lindle, J.C. (1989). What do parents want from principals and teachers? *Educational Leadership, 47*(2), 8-10.

MacPhee, D., Ramey, C., & Yeates, K. (1984). Home environment and early cognitive development: Implications for intervention. In A.W. Gottfried (Ed.), *Home environment and early cognitive development: Longitudinal research* (pp. 343-370). Orlando, FL: Academic Press.

Marjoribanks, K. (1980). *Ethnic families and children's achievement*. Sydney, Australia: Allen and Unwin.

Marjoribanks, K. (1988). Perceptions of family environments, educational and occupational outcomes: Social-status differences. *Perceptual and Motor Skills, 66*, 3-9.

Marliave, R. & Filby, N.N. (1985). Success rate: A measure of task appropriateness. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 217-235). New York: Longman.

McCaslin, M. & Good, T.L. (1992). Compliant cognition: The misalliance of management and instructional goals in school reform. *Educational Researcher, 21*, 4-17.

McDill, E.L., Rigsby, L., & Meyers, E. (1969). *Educational climates of high schools: Their effects and sources*. Baltimore, MD: Johns Hopkins University, Center for the Study of Social Organization of Schools. (ERIC Document Reproduction Service No. ED 030-205)

McGillicuddy-DeLisi, A.V. (1982). The relationship between parents' beliefs about development and family constellation, socioeconomic status, and parents' teaching strategies. In L.M. Laosa & I.E. Siegel (Eds.), *Families as learning environments for children* (pp. 261-299). NY: Plenum Press.

McKinney, J.A. (1975). *The development and implementation of a tutorial program for parents to improve the reading and mathematics achievement of their children.* Doctoral dissertation, Nova University. (ERIC Document Reproduction Service No. ED 113-703)

Milne, A.M. (1989). Family structure and the achievement of children. In W.J. Weston (Ed.), *Education and the American family* (pp. 32-65). New York: New York University Press.

Mirkin, P.K., Fuchs, L.S., & Deno, S.L. (1982). *Considerations for designing a continuous evaluation system: An integrative review* (Monograph No. 20). Minneapolis, MN: Institute for Research on Learning Disabilities, University of Minnesota.

Mohite, P. (1987). *Mother-child interaction and its effects on a child's learning.* Paper presented at the Biennial Meeting of the International Society for the Study of Behavioral Development. (ERIC Document Reproduction Services No. ED 291-488)

Moles, O. (1982). Synthesis of recent research on parent participation in children's education. *Educational Leadership, 40,* 44-47.

Morrow, L.M. (1983). Home and school correlates of early interest in literature. *Journal of Educational Research, 76,* 221-230.

Morrow, W.R. & Wilson, R.C. (1961). Family relations of bright high-achieving and underachieving high school boys. *Child Development, 32,* 501-510.

Mullen, B.L. (1989). *Implementation of parent involvement in math programs in Creve Couer schools, Creve Couer, Illinois.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

National Commission on Children. (1991). *Beyond rhetoric: A new American agenda for children and families.* Washington, DC: U.S. Government Printing Office.

National Commission on Excellence in Education. (1983). *A nation at risk.* U.S. Department of Education. Washington, DC: U.S. Government Printing Office.

Neuman, S.B. (1980). Television: Its effects on reading and school achievement. *The Reading Teacher, 33,* 801-805.

Newby, T. (1991). Classroom motivation: Strategies of first-year teachers. *Educational Psychology, 83,* 195-200.

Norman-Jackson, J. (1982). Family interactions, language development, and primary reading achievement of black children in families of low income. *Child Development, 53,* 349-358.

Olson, L. (1990, April). Parents as partners: Redefining the social contract between parents and schools [Special issue]. *Education Week, 9*(28), 17-24.

Palincsar, A.M. & Brown, A.L. (1984). Reciprocal teaching of comprehension: Fostering and comprehension monitoring activities. *Cognition and Instruction, 1,* 117-175.

Palmer, F.H. (1977, October). *The effects of early childhood intervention.* Paper presented at the annual meeting of the American Association for the Advancement of Science, Denver, CO.

Parsons, J.E., Adler, T.F., Karzala, C.M., & Meece, J.L. (1982). Socialization of achievement attitudes and beliefs: Parental influences. *Child Development, 53,* 310-321.

Paschal, R.A., Weinstein, T., & Walberg, H.J. (1984). The effects of homework on learning: A qualitative synthesis. *Journal of Educational Research, 78,* 97-104.

Patterson, G.R. (1982). *Coercive family processes*. Eugene, OR: Castalia Press.

Patterson, G.R., Capaldi, D., & Bank, L. (in press). An early starter model for predicting delinquency. In D. Pepler & K.M. Rubins (Eds.), *The development and treatment of childhood aggression*. Hillsdale, NJ: Lawrence Erlbaum.

Pearl, R. & Bryan, T. (1982). Mothers' attributes for their learning disabled child's success and failures. *Learning Disability Quarterly, 5*, 53-57.

Pearson, P.D. & Dole, J.A. (1985). Explicit comprehension instruction: The model, the research, and the concerns. Paper presented at the American Educational Research Association, Chicago.

Pearson, P.D. & Tierney, R. (1983). In search of a model of instructional research in reading. In S.G. Palis, G.M. Olson, & H.W. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 39-60). Hillsdale, NJ: Lawrence Erlbaum.

Peterson, N.L. & Cooper, C.S. (1989). Parent education and involvement in early intervention programs for handicapped children: A different perspective on parent needs and the parent-professional relationship. In M.J. Fine (Ed.), *The second handbook on parent education*. Contemporary perspectives (pp. 197-236). New York: Academic Press.

Peterson, P.L. (1979). Direct instruction reconsidered. In P.L. Peterson & H.J. Walberg (Eds.), *Research on teaching: Concepts, findings, and implications* (pp. 57-69). Berkeley, CA: McCutchan.

Peterson, P.L., Carpenter, T., & Fennema, E. (1989). Teachers' knowledge of students' knowledge in mathematics problem solving: Correlational and case analyses. *Journal of Educational Psychology, 81*, 558-569.

Peterson, P.L. & Swing, S.R. (1982). Beyond time on task: Students' reports of their thought processes during direct instruction. *Elementary School Journal, 82*, 481-491.

Peterson, P.L., Swing, S.R., Braverman, M.T., & Buss, R. (1982). Students' aptitudes and their reports of cognitive processes during instruction. *Journal of Educational Psychology, 74*, 535-547.

Peterson, P.L., Swing, S.R., Stark, K.D., & Waas, G.A. (1984). Students' cognitions and time on task during mathematics instruction. *American Educational Research Journal, 21*, 487-515.

Portes, P.R., Dunham, R.M., & Williams, S. (1986). Assessing child-rearing style in ecological settings: Its relation to culture, social class, early age intervention, and scholastic achievement. *Adolescence, 22*(83), 723-735.

Portes, P.R., Franke, S., & Alsup, R. (1984, April). *Identification of parent-child interaction characteristics of high and low achieving elementary students*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Services No. ED 247-303)

Portsmouth, R., Wilkins, J., & Airey, J. (1985). Home-based reading for special school pupils. *Educational Psychology in Practice, 1*(2), 52-58.

Posner, G. (1982). A cognitive science conception of curriculum and instruction. *Journal of Curriculum Studies, 14*(4), 343-351.

Radencich, M.C. & Schumm, J.S. (1988). *How to help your child with homework*. Minneapolis, MN: Free Spirit Publishing, Inc.

Radin, N. (1971). Maternal warmth, achievement motivation, and cognitive functioning in lower-class preschool children. *Child Development, 42*, 1560-1565.

Radin, N. (1972). Father-child interaction and the intellectual functioning of four-year-old boys. *Developmental Psychology, 6*, 353-361.

Rankin, P.T. (1967). *The relationship between parent behavior and achievements of inner-city elementary school children*. Paper presented at the Annual Meeting of the American Educational Research Association, Washington, DC. (ERIC Document Reproduction Services No. ED 017 550)

Reid, E.R. (1981). *Teaching, scheduling and record keeping*. Salt Lake City, UT: Love Publishers.

Reid, E.R. (1986). Practicing effective instruction: The Exemplary Center for Reading. *Exceptional Children, 52*(6), 510-519.

Reid, J.B. & Patterson, G.R. (1990). Early prevention and intervention with conduct problems: A social interactional model for the integration of research and practice. In G. Stoner, M.R. Shinn, & H.M. Walker (Eds.), *Interventions for achievement and behavior problems* (pp. 715-739). Colesville, MD: National Association of School Psychologists.

Reith, H. & Evertson, C. (1988). Variables related to the effective instruction of difficult-to-teach children. *Focus on Exceptional Children, 20*, 2-7.

Reith, H.J. & Frick, T. (1982). An analysis of academic learning time of mildly handicapped students in special education services delivery systems: Initial report on classroom process variables. Bloomington, IN: Center for Innovation in Teaching the Handicapped, Indiana University.

Resnick, L.B. (1977). Assuming that everyone can learn everything, will some learn less? *School Review, 85*, 445-452.

Rich, D. (1987). Schools and families: Issues and actions. Washington, DC: National Education Association.

Ridley-Johnson, R., Cooper, H., & Chance, J. (1982). The relation of children's television viewing to school achievement and IQ. *Journal of Educational Research, 76*, 294-297.

Ritchie, D., Price, V., & Roberts, D.F. (1987). Television, reading, and reading achievement. *Communication Research, 14*, 292-315.

Rohrkemper, M. & Bershon, B. (1984). Elementary students' reports of the causes and effects of problem difficulty in mathematics. *Elementary School Journal, 85*, 127-147.

Romotowski, J. & Trepanier, M. (1977). *Examining and influencing the home reading behaviors of young children*. (ERIC Document Reproduction Service No. ED 195-938)

Rosenfield, S. (1987). *Instructional consultation*. Hillsdale, NJ: Lawrence Erlbaum.

Rosenshine, B.V. (1976). Classroom instruction. In N.L. Gage (Ed.), *The psychology of teaching methods: The seventy-fifth yearbook of the National Society for the Study of Education* (pp. 118-147). Chicago: University of Chicago Press.

Rosenshine, B.V. (1977). *Primary grades instruction and student achievement gain*. Urbana, IL: Bureau of Educational Research.

Rosenshine, B.V. (1979). Content, time, and direct instruction. In P.L. Peterson & H.J. Walberg (Eds.), *Research on teaching: Concepts, findings, and implications* (pp. 28-56). Berkeley, CA: McCutchen.

Rosenshine, B.V. (1983). Teaching functions in instructional programs. *The Elementary School Journal, 83*(4), 335-351.

Rosenshine, B.V. (1986). Synthesis of research on explicit teaching. *Educational Leadership, 43*(7), 60-69.

Rosenshine, B.V. & Berliner, D.L. (1978). Academic engaged time. *British Journal of Teacher Education, 4,* 3-16.

Rosenshine, B.V. & Stevens, R. (1986). Teaching functions. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.) (pp. 376-391). New York: MacMillan.

Rosenthal, A., Baker, K., & Ginsburg, A. (1983). The effect of language background on achievement level and learning among elementary students. *Sociology of Education, 56,* 157-169.

Rutter, M. (1985). Family and school influences on behavioral development. *Journal of Child Psychology and Psychiatry, 26*(3), 349-368.

Salvia, J. & Ysseldyke, J.E. (1991). *Assessment* (5th ed.). Boston, MA: Houghton Mifflin.

Samuels, S.J. (1982). Some essentials of decoding. *Exceptional Education Quurterly, 2,* 11-25.

Sattes, B. (1985). *Parent involvement: A review of the literature* (Report No. 21). Charleston, WV: Appalachia Educational Laboratory.

Sattler, J.M. (1988). *Assessment of children* (3rd ed.). San Diego: Author.

Schunk, D.H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychologist, 25,* 71-86.

Scott-Jones, D. (1984). Family influences on cognitive development and school achievement. *Review of Research in Education, 11,* 259-304.

Searls, D.T., Mead, N.A., & Ward, B. (1985). The relationship of students' reading skills to TV watching, leisure time reading, and homework. *Journal of Reading, 29,* 158-162.

Searls, E.F., Lewis, M.B., & Morrow, Y.B. (1982). Parents as tutors—it works! *Reading Psychology,* 3(2), 117-129.

Seeley, D.S. (1984). Educational partnership and the dilemma of school reform. *Phi Delta Kappan, 65,* 383-388.

Seeley, D.S. (1985). *Education through partnership.* Washington, DC: American Enterprise Institute for Public Policy Research.

Seeley, D.S. (1989). A new paradigm for parent involvement. *Educational Leadership, 47*(2), 46-48.

Seginer, R. (1983). Parents' educational expectations and childrens' academic achievements: A literature review. *Merrill Palmer Quarterly, 29,* 1-23.

Seginer, R. (1986). Mothers' behavior and sons' performance: An initial test of an academic achievement path model. *Merrill Palmer Quarterly, 32*(2), 153-166.

Shapiro, E.S. (1989). *Academic skill problems: Direct assessment and intervention.* New York: Guilford Press.

Shields, P. (1983). Influence of parent practices upon the reading achievement of good and poor readers. *Journal of Negro Education, 52*(4), 436-445.

Shrout, P.E. & Fleiss, J.L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin, 86*(2), 420-428.

Shuck, A., Ulsh, F., & Platt, J. (1983). Parents encourage pupils (PEP): An innercity parent involvement reading project. *Reading Teacher, 36,* 524-528.

Simon, H.A. (1973). The structure of ill-structured problems. *Artificial Intelligence, 4,* 181-201.

Sindelar, P.T., Smith, M.A., Harriman, N.E., Hale, R.L., & Wilson, R.J. (1986). Teacher effectiveness in special education programs. *Journal of Special Education, 20,* 195-207.

Slavin, R.E. (1980). Cooperative learning. *Review of Educational Research, 50,* 317-343.

Sloane, K.D. (1991). Home support for successful learning. In Silvern, S.B. (Ed.), *Advances in reading/language research: Vol. 5. Literacy through family, community, and school interaction* (pp. 153-172). Greenwich, CT: JAI Press.

Smith, M.B. (1968). School and home: Focus on achievement. In A.H. Passow (Ed.), *Developing programs for the educationally disadvantaged* (pp. 79-101). New York: Teacher's College Press.

Smrekar, C. (1989, April). *The voices of parents: Rethinking the intersection of family and school.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Snider, W. (1990, November). Parents as partners: Adding their voices to decisions on how schools are run. *Education Week, 9*(44), 11-15.

Snow, C.E. (1983). Literacy and language: Relationships during the preschool years. *Harvard Educational Review, 53,* 165-189.

Soar, R.S. (1973). Follow-through classroom process measurement and pupil growth (1970-71): Final report. Gainesville, FL: College of Education, University of Florida.

Soar, R.S. & Soar, R.M. (1980). *Climate and control system.* Unpublished manuscript, University of Florida, Gainesville, FL.

Solomon, D., Watson, M.S., Delucchi, K.L., Schaps, E., & Battistick, V. (1988). Enhancing children's prosocial behavior in the classroom. *American Educational Research Journal, 25,* 527-554.

Sonnenschein, J.L. (1983). *Basic Achievement Skills Individual Screener.* Cleveland, OH: Psychological Corporation.

Squires, D.A., Huitt, W.G., & Segars, J. (1983). *Effective schools and classrooms: A research-based perspective.* Alexandria, VA: Association for Supervision and Curriculum Development.

Stallings, J. (1975). Implementation and child effects of teaching practice in follow through classrooms. *Monographs of the Society for Research in Child Development, 40* (7-8, Serial No. 163).

Stallings, J.A. & Kaskowitz, D.H. (1974). *Follow-through classroom observation evaluation, 1972-3.* Menlo Park, CA: Stanford Research Institute.

Starkey, J.D. & Swinford, H. (1974). *Reading: Does television viewing time affect it?* Dekalb, IL: Northern Illinois University. (ERIC Document Reproduction Service No. ED 090-966)

Steinberg, L., Elmen, J.D., & Mounts, N.S. (1989). Authoritative parenting, psychosocial maturity, and academic success among adolescents. *Child Development, 60,* 1424-1436.

Steinberg, L., Mounts, N. S., Lamborn, S.D., & Dornbusch, S.M. (1991). Authoritative parenting and adolescent adjustment across varied ecological niches. *Journal of Research on Adolescence, 1*(1), 19-36.

Stevens, R. & Rosenshine, B. (1981). Advances in research on teaching. *Exceptional Educational Quarterly, 2*(1), 1-9.

Stevenson, H.W. & Lee, S. (1990). Contexts of achievement: A study of American, Chinese, and Japanese children. *Monographs of the Society for Research in Child Development, 55,* 1-106.

Strong, R.W., Silver, H.F., & Hanson, R. (1985). Integrating teaching strategies and thinking styles with the elements of effective instruction. *Educational Leadership, 42,* 9-15.

Swap, S.M. (1987). *Enhancing parent involvement in schools.* New York: Teacher's College Press.

Tangri, S.S. & Leitch, M.L. (1982). *Barriers to home-school collaboration: Two case studies in junior high schools* (Final Report, NIE Grant G-81-0033). Washington, DC: National Institute of Education.

Teale, W. (1978). Positive environments for learning to read: What studies of early readers tell us. *Language Arts, 55,* 922-932.

Thompson, M.S., Alexander, K.L., & Entwisle, D.R. (1988). Household composition, parental expectations, and school achievement. *Social Forces, 67,* 424-451.

Thurlow, M.L., Ysseldyke, J.E., & Wotruba, J.W. (1988). *Student and instructional outcomes under varying student teacher ratios in special education* (Research Report No. 12). Minneapolis, MN: University of Minnesota Instructional Alternatives Project.

Tiegs, E.W. & Clark, W.W. (1977). *California Achievement Test.* Monterey, CA: CTB/McGraw-Hill.

Tizard, J., Schofield, W., & Hewison, J. (1982). Collaboration between teachers and parents in assisting children's reading. *British Journal of Education, 52,* 1-15.

Tobias, S. (1982). When do instructional materials make a difference? *Educational Researcher, 11,* 4-9.

Tollison, P., Palmer, D.J., & Stowe, M.L. (1987). Mothers' expectations, interactions, and achievement attributions for their learning disabled or normally achieving sons. *Journal of Special Education, 21,* 83-93.

Tyler (1950). *Basic principles of curriculum instruction.* Chicago: University of Chicago Press.

Vosler-Hunter, R.W. (1989). Families and professionals working together: Issues and opportunities. *Focal Point, 4*(1), 1-4.

Wagenaar, T.C. (1977, September). *School achievement levels vis-a-vis community involvement and support: An empirical assessment.* Paper presented at the annual meeting of the American Sociological Association, Chicago.

Wagner, L. (1980). The effects of TV on reading. *Journal of Reading, 24,* 201-206.

Walberg, H.J. (1984). Families as partners in educational productivity. *Phi Delta Kappan, 65,* 397-400.

Walberg, H.J., Bole, R.J., & Waxman, H.C. (1980). School-based family socialization and reading achievement in the inner city. *Psychology in the Schools, 17,* 509-514.

Walberg, H.J., Paschal, R.A., & Weinstein, T. (1985). Homework's powerful effects on learning. *Educational Leadership, 42*(7), 76-79.

Walker, H.M., Shinn, M.R., O'Neill, R.G., & Ramsey, E. (1987). A longitudinal assessment of antisocial behavior in boys: Rationale, methodology, and first year results. *Remedial and Special Education, 8*(4), 7-16.

Wallace, G. & Larsen, S.C. (1978). *Educational assessment of learning problems: Testing for teaching*. Boston, MA: Allyn & Bacon.

Wang, M.C. (1984). Time-use and the provision of adaptive instruction. In L.W. Anderson (Ed.), *Time and school learning* (pp. 167-203). New York: St. Martin's Press.

Wang, M.C. (1985). An analysis of program design implications for teaching and student use of school time. In C.W. Fisher & D.C. Berliner (Eds.), *Perspectives on instructional time* (pp. 237-262). New York: Longman.

Wang, M.C., Walberg, H.J. (Eds.). (1984). *Adapting instruction to individual differences*. Berkeley, CA: McCutcheon.

Watson, T., Brown, M., & Swick, K.J. (1983). The relationship of parents' support to children's school achievement. *Child Welfare, 62*(2), 175-180.

Waxman, H.C., Wang, M.C., Anderson, K.A., & Walberg, H.J. (1985). Synthesis of research on the effects of adaptive instruction. *Educational Leadership, 43*, 26-29.

Webb, N.M. (1982). Student interaction and learning in small groups. *Review of Educational Research, 52*, 421-446.

Weinstein, C.E. & Mayer, R.E. (1986). The teaching of learning strategies. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 315-327). New York: Macmillan.

Weinstein, R.S. (1983). Student perceptions of schooling. *The Elementary School Journal, 83*, 287-312.

Weinstein, R.S., Marshall, H.H., Brattesani, K.A., & Middlestadt, S.E. (1982). Student perceptions of differential treatment in open and traditional classrooms. *Journal of Educational Psychology, 74*, 678-692.

Weinstein, R.S. & Middlestadt, S.E. (1979). Student perceptions of teacher interactions with male high and low achievers. *Journal of Educational Psychology, 71*, 421-431.

Wells, K.C., Forehand, R., & Griest, D.L. (1980). Generality of treatment effects from treated to untreated behaviors resulting from a parent training program. *Journal of Clinical Child Psychology, 9*, 217-219.

Wheldall, K. & Olds, D. (1987). Of sex and seating: The effects of mixed and same-sex seating arrangements in junior high classrooms. *New Zealand Journal of Educational Studies, 22*(11), 71-85.

White, K.R. (1982). The relationship between socioeconomic status and academic achievement. *Psychological Bulletin, 91*(3), 461-481.

Wigfield, A. (1983, April). *Students' perceptions of their parents' beliefs*. Paper presented as part of a symposium entitled "Social Influences on Students' Achievement, Beliefs, and Behavior" at the Biennial Meeting of the Society for Research in Child Development, Detroit, MI. (ERIC Document Reproduction Service No. ED 235-926)

Wiley, D. & Harnischfeger, A. (1974). Explosion of a myth: Quantity of schooling and exposure to instruction: Major educational vehicles. *Educational Researcher, 3*, 7-12.

Williams, D.L. & Stallworth, J.T. (1984). *Parent involvement in education: What a survey reveals*. Austin, TX: Southwest Regional Educational Development Lab, Parent involvement in Education Project. (ERIC Document Reproduction Service No. ED 253-327)

Williams, P.A., Haertel, E.H., Haertel, G.D., & Walberg, H.J. (1982). The impact of leisure-time television on school learning. *American Educational Research Journal, 19,* 19-50.

Winne, P.H. (1985). Steps toward promoting cognitive achievements. *Educational Leadership, 85* (5), 673-693.

Winne, P.H. & Marx, R.W. (1982). Students' and teachers' views of thinking processes for classroom learning. *Elementary School Journal, 82,* 493-518.

Wittrock, M.C. (1986). Student thought processes. In M.C. Wittrock (Ed.), *Handbook for research on teaching* (3rd ed., pp. 397-414). New York: MacMillan.

Wolf, R. (1979). Achievement in the United States. In H.J. Walberg (Ed.), *Educational environments and effects: Evaluation, policy, and productivity.* Berkeley, CA: McCutchan.

Wong, B.Y., Wong, R., & LeMare, L. (1982). The effects of knowledge of a criterion task on comprehension and recall in normally achieving and learning disabled children. *Journal of Educational Research, 76,* 119-126.

Ysseldyke, J.E. & Christenson, S.L. (1986). *The instructional environment scale (TIES).* Austin, TX: Pro-Ed.

Ysseldyke, J.E. & Christenson, S.L. (1987). Evaluating students' instructional environments. *Remedial and Special Education, 8*(3), 17-24.

Ysseldyke, J.E., Christenson, S.L., Thurlow, M.T., & Bakewell, D. (1990). Are different kinds of instructional tasks used by different categories of students in different settings? *School Psychology Review.*

Ysseldyke, J.E., Thurlow, M.L., Christenson, S.L., & McVicar, R. (1990). Instructional grouping arrangements used with mentally retarded, learning disabled, emotionally disturbed, and nonhandicapped elementary students. *Journal of Educational Research.*

Ysseldyke, J.E., Thurlow, M.L., Christenson, S.L., & Weiss, J. (1987). Time allocated to instruction of mentally retarded, learning disabled, emotionally disturbed, and nonhandicapped elementary students. *Journal of Special Education, 21*(3), 43-55.

Zigmond, N. & Miller, S.E. (1986). Assessment for instructional planning. *Exceptional Children, 52,* 501-509.

APPENDIX A

Data-Gathering Tools

1. Observation Record
2. Teacher Interview Record
3. Student Interview Record
4. Intervention Planning Form

These forms may be reproduced. In addition, users may want to supplement the Teacher Interview Record and Student Interview Record with other questions. These are found in Appendix C and D respectively.

OBSERVATION RECORD

TIES II
THE INSTRUCTIONAL ENVIRONMENT SYSTEM-II

Student ____________________

Grade ____________ Age ____________

Content Area ____________________

Date of Observation ____________________

Length of Observation ____________________

Examiner ____________________

Step 1. Before describing the student's response to instruction, find out what is being taught, what is the goal of the lesson, and where the lesson is placed in the instructional sequence.

What is the content of instruction? ____________________

What is the goal of the lesson? ____________________

Placement in lesson sequence:

☐ New, introductory ☐ New, plus initial practice ☐ Practice ☐ Review

Step 2. Remember: The target student is the focus of the observation. Using the 12 instructional environment components as a systematic way to observe, observe the student in relation to the task characteristics and instructional and management strategies used. Record relevant observations (e.g., student's response to instruction), ideas for intervention, and additional questions that may help the collaborative team design an intervention for the target student.

Observation Record

Page 2

INSTRUCTIONAL PLANNING

- Instructional Match
- Teacher Expectations

How are the student's performance and behavior affected by instructional planning?

INSTRUCTIONAL MANAGEMENT

- Classroom Environment

How are the student's performance and behavior affected by instructional management?

INSTRUCTIONAL DELIVERY

- Instructional Presentation
- Cognitive Emphasis
- Motivational Strategies
- Relevant Practice
- Informed Feedback

How is the student's performance and behavior affected by instructional delivery?

INSTRUCTIONAL MONITORING AND EVALUATION

- Academic Engaged Time
- Adaptive Instruction
- Progress Evaluation
- Student Understanding

How are the student's performance and behavior affected by instructional monitoring and evaluation?

STUDENT INTERVIEW RECORD

TIES II
THE INSTRUCTIONAL ENVIRONMENT SYSTEM-II

Student ______________________________
Grade ______________ Age ____________
Content Area __________________________
Date _________________________________
Examiner _____________________________

Introduction

Students like to talk about their schoolwork, and their perceptions are valuable in designing interventions. This semistructured interview format allows the examiner to gather information of both the student's perception of the assigned task during the classroom observation and the student's perception of assignments during the last month. Also, the semistructured interview format allows the examiner to pursue individualized questions with the student. Rewording of questions may be necessary, and if so, is encouraged.

Instructions

I want to find out what you think about your school work; things like how hard it is, how easy it is, what your teacher wants you to do, what helps you learn and get your work done. I have some questions, but I want you to tell me anything "extra" you would like.

Step 1.

Directions for Assigned Task During Classroom Observation: I have some questions for you about the work you were doing today in ______________. (The examiner should have the work available.)
(class)

1. I want you to tell me what you needed to do on this assignment (or these assignments).
   a. What did your teacher want you to learn? ______________________________
   b. What did your teacher tell you about why this assignment is important?
   ____
   c. What did you have to do? ____
   d. Show me how you did the work. (Have the student explain a sample item.)
   ____

2. I am going to ask you several questions. In each case, I want you to tell me your answer by answering "Yes," "No," or "Kind of."

	YES	NO	KIND OF
a. I understood this assignment.			
b. I believed I could do the assignment.			
c. This assignment was interesting.			
d. This assignment was different than most of my assignments.			

3. Knowledge of strategies for assigned task:
   a. (Declarative Knowledge)—Do you know of any ways to go about this assignment to make it easier? ______________________________
   b. (Procedural Knowledge)—How do you do that? ______________________________
   c. (Conditional Knowledge)—When would you use that? Why would you bother to do that? ______________________________

4. Student success rate (recorded by the examiner): ______________________________

Step 2. **Directions for Assignments During the Last Month:** I want you to think about your work in this class. Think about the kind of work you've had for the last month. Answer "Yes," "No," or "Sometimes" to my questions.

1. **Context of Instruction**

	YES	NO	SOME-TIMES
a. My assignments are interesting to me.			
b. I can get most of the answers correct on my assignments.			
c. I want to do a good job on assignments.			
d. I do a good job on assignments.			
e. I get enough time to do my work.			
f. My teacher calls on me to answer questions in class.			

2. Understanding of Assignments

		YES	NO	SOME-TIMES
a.	I know how to complete my assignments.			
b.	I usually need lots of help from my teacher to understand what I have to do.			

3. Student Accountability for Learning

		YES	NO	SOME-TIMES
a.	I do my schoolwork when I'm supposed to.			
b.	I try hard to complete my work but I don't always get it done.			
c.	I answer questions in class.			
d.	I ask for help when I need it or when I have a question about the assignment.			

e. I am successful at my schoolwork when:

1. ____________________
2. ____________________
3. ____________________

4. Teacher Expectations

		YES	NO	SOME-TIMES
a.	I know what my teacher expects me to do.			
b.	I know when I'm confused.			
c.	I know what to do when I'm finished with my work.			

d. What happens when your work isn't done or you make lots of mistakes?

____

____

5. **Student Cognitions** (Answer "Yes," "No," "Sometimes," or "Don't know.")

a. When you're learning new skills or ideas:

		YES	NO	SOME-TIMES	DON'T KNOW
1.	Do you listen closely to what the teacher says?				
2.	Do you miss important things your teacher says because you aren't paying attention?				

	YES	NO	SOME-TIMES	DON'T KNOW
3. Do you think about things you learned in the past that are like the new things the teacher is talking about?				

b. When your teacher talks about things you don't understand:

	YES	NO	SOME-TIMES	DON'T KNOW
1. Do you stop listening and start to think about other things?				
2. Do you just forget about it and listen to what the teacher says next?				
3. Can you figure out exactly what it is that you don't understand?				

c. When your teacher asks other students questions during class:

	YES	NO	SOME-TIMES	DON'T KNOW
Do you figure out the answers?				

d. When you are doing your schoolwork:

	YES	NO	SOME-TIMES	DON'T KNOW
1. Do you find out that you didn't understand the lesson as well as you thought you did while the teacher was teaching?				
2. Do you think about how the teacher worked similar problems or examples?				
3. Do you know if you have done your work right or wrong?				

e. What do you do when you can't do your schoolwork? ____________________

f. Do you learn more if you do some extra work at home? ☐ Yes ☐ No

g. Is there anything else you want to tell me about your schoolwork? ____________

TEACHER INTERVIEW RECORD

Student ________________________
Grade ____________ Age ____________
Date ________________________
School ________________________
Teacher ________________________
Examiner ________________________

Instructions It is important for me to understand what it is like to have ____________ as a student in your classroom, what it is like to teach him/her every day. I have some questions about ____________'s instruction that will help me to better understand your experience with him/her.

	AREA		SAMPLE QUESTIONS
1.	**Typical Performance**		How typical was ________'s performance on ________ (day)?
2.	**Instructional Goal**		When I observed ________ in ________ (class), you told me the goal of the lesson was ______________________.
		a.	Do you have other instructional goals for ____________? Explain: ______________________
		b.	How do your goals differ from those for his/her classmates? ______________________

AREA	SAMPLE QUESTIONS
3. **Expectations**	What have you told ________ about your expectations for: a. Classroom participation? b. Completing tasks? c. Neatness? d. Accuracy? e. Obtaining assistance? f. General behavior? Do you call on ________ during class discussion? What happens? ________________________________ ____ ____
4. **Planning Instruction**	What information have you used to plan assignments for ________? ________________________________ What other information do you think we need to plan assignments? ________________________________ ____
5. **Instructional Placement**	a. What is ________'s success rate on assignments? b. How would you describe ________'s task completion rate? ☐ Low ☐ Moderate ☐ High c. How would you describe ________'s time on task? ☐ Low ☐ Moderate ☐ High d. How did you decide where to place ________ in the curriculum? ________________________________ ____ e. Do you think there is a good match between ______'s skill level and the demand on the assignments? _____ Tell me more. ________________________________ ____
6. **Independent Assignments**	a. How much time does ________ have to practice? b. Does ________ work alone or with others? c. What kinds of assignments can ________ handle most successfully? d. Do ________'s seatwork assignments vary from day to day or week to week? ______________ Tell me more. ____ ____

AREA — **SAMPLE QUESTIONS**

7. **Evaluate Progress**

a. How do you check/monitor ________'s progress?

b. How does ________ compare to other students in achieving your goals?

c. Does ________ need more time to learn than the curriculum allows? ____________ How much more time is needed for ________ to learn than for his/her peers? ____

____

____

8. **Overall Success Rate**
(Obtained From Teacher)

a. For new, introductory assigned tasks:

   i. Relative to peers, estimate the student's percentage of assignments completed (regardless of accuracy).
   ☐ 0-49% ☐ 50-70% ☐ 71-99% ☐ 100%

   ii. Relative to peers, estimate the student's accuracy of completed assignments (i.e., % correct of work done).
   ☐ 0-49% ☐ 50-70% ☐ 71-99% ☐ 100%

b. For independent practice tasks:

   i. Relative to peers, estimate the student's percentage of assignments completed (regardless of accuracy).
   ☐ 0-49% ☐ 50-70% ☐ 71-99% ☐ 100%

   ii. Relative to peers, estimate the student's accuracy of completed assignments (i.e., % correct of work done).
   ☐ 0-49% ☐ 50-70% ☐ 71-99% ☐ 100%

9. Is there anything else I should know about ______________________'s instruction?

____

____

____

____

____

____

____

INTERVENTION PLANNING FORM

TIES II
THE INSTRUCTIONAL ENVIRONMENT SYSTEM-II

Student ______________________

Grade ____________ Age ____________

Content Area ______________________

Date of Observation ______________________

Team Members ______________________

____

____

Step 1. **Collaborative Planning Sequence:** As instruction is planned for this student, follow these steps.

1. **Have the teacher(s) describe the concern(s):**

   Desired level of performance: ______________________

   Actual level of performance: ______________________

2. **Share Information.** Analyze the instructional environment components by identifying the extent to which they are present and important. Note any discrepancy between teacher perceptions and examiner perceptions. Summarize participants' observations about the student's instructional needs.

   Instructional Planning: ______________________

   ____

   ____

   ____

   Instructional Management: ______________________

   ____

   ____

   ____

Instructional Delivery:

Instructional Monitoring and Evaluation:

3. **Arrive at consensus:** What are the student's instructional needs in the classroom?

4. **Describe home support for learning:** What are the student's instructional needs at home?

5. **Identify ways to involve parents:**

6. **Brainstorm ideas/options:** Tyler (1950) described instruction as the intentional manipulation of the learning environment to facilitate an appropriate response from the student. How would you intentionally manipulate this student's learning environment to close the gap between the student's actual and desired levels of performance?

7. **Select an intervention (or interventions):** Which idea(s) does the referring teacher want to try?

8. **Share resources:** What can several individuals contribute to change the student's performance and behavior in the learning environment?

   Referring teacher:

   Other teachers:

   Examiner:

   Student:

   Parent(s):

   Peers:

   Other:

9. **Other questions:** Record questions or issues that come up in the collaborative planning process that are important, but need to be addressed at a later time. This is where the tangential information (i.e., indirectly related to referral concern) is recorded.

Step 2. **Intervention Documentation:** What interventions have been tried? Which have been successful (i.e., close the gap between actual and desired levels of performance)?

DATE	INSTRUCTIONAL NEEDS	INTERVENTION ACTIONS TAKEN	EVALUATION OF SUCCESS

APPENDIX B

Descriptors of *TIES-II* Components

These descriptors are detailed lists of the factors that comprise each component. They help *TIES-II* users to learn the content of the 17 system components and to identify potential targets for instructional intervention.

Component 1

Instructional Match

Instructional Match includes two functions: Instructional Diagnosis and Instructional Prescription. Instructional Diagnosis refers to the extent to which student characteristics (e.g., skill level, motivation), task characteristics (e.g., sequence, cognitive demands), and classroom characteristics (e.g., instructional groupings, materials) have been accurately assessed. Instructional Prescription refers to the match between the student's instructional needs and instruction delivered. The student success rate and the amount of content covered characterize the degree of task appropriateness for a student. Several factors influence the extent to which instructional planning is optimal for a student's academic progress. Consider the following factors in making judgments about the extent to which instructional match is present and important for the target student.

Instructional Diagnosis

1. The student's level of skill development (e.g., entry-level skills) is assessed accurately.
2. The student's academic strengths, weaknesses, and interests are identified accurately.
3. The student's behavioral strengths, weaknesses, and interests are identified accurately.
4. The student's instructional needs in affective areas (e.g., attitude, self-concept) are identified accurately.
5. The student's appropriate instructional level is identified.
6. There is a logical sequence to instruction.
7. The steps involved in completing the classroom task are identified accurately through task analysis or similar procedures.
8. Prerequisite skills needed to perform the task have been considered and accurately identified.
9. Cognitive demands of the classroom task (e.g., memory, number of steps involved) are identified accurately.
10. Contextual variables (e.g., instructional groupings, interactions with other students, availability of materials, kinds of tasks) have been considered.
11. The gap between the student's actual and desired levels of performance is stated clearly.

Instructional Prescription

1. The student's instructional needs (e.g., strengths, weakness, skill level, prior learning) are considered when assigning tasks.

2. Appropriate instructional goals/objectives are established on the basis of the student's instructional needs.
3. Instructional goals are matched to the level of skill development of the student.
4. The instructional process is guided by the objective or goal to be achieved rather than workbook pages to be completed.
5. The priority of each goal/objective is determined.
6. The instructional sequence for achieving the goals/objectives is planned.
7. Instructional goals/objectives for the student are specific and described in measurable ways.
8. Appropriate standards are established for satisfactory performance (or, it is clear how the student is to demonstrate mastery of the goal/objective).
9. There is flexibility in choosing instructional materials/methods for the student.
10. Instructional planning is not limited by strict adherence to district curriculum objectives or textbooks/materials.
11. Teaching strategies, methods, and materials are matched to the student's interests and level of skill development.
12. The student's interest or preference for learning materials is considered in planning instruction.
13. There is flexible use of grouping structures to accommodate the student's instructional needs.
14. Assignments are appropriately paced by the teacher.
15. Different lessons are planned to accomplish varied goals (e.g., instruct, practice, generalize, review).
16. There is adequate content coverage.
17. The student's success rate on assigned tasks is predicted with reasonable accuracy (e.g., 75-90%).
18. The student's success rate on assigned tasks is carefully monitored.
19. The success rate is moderately high on new tasks (e.g., 70-85%).
20. The success rate is high on independent practice activities (e.g., 90-100%).
21. The ratio of known to unknown material is appropriate (90-100% for independent work, 70-75% for instruction).
22. Potential problems or difficulties for the student on assigned tasks are anticipated by the teacher.
23. Diagnostic teaching is used to ensure a successful instructional match.
24. Tasks are modified as needed in order to ensure an appropriate success rate for the student.

Component 2

Teacher Expectations

Establishing high, yet realistic, expectations for student performance, including task completion, quality of work, and use of time in the classroom, is an important characteristic of effective instruction. Teacher Expectations refers to the kind of expectations set for student performance, the communication of the expectations, and the extent to which the student understands the expectations. Consider the following factors when making judgments about the extent to which teacher expectations are present and important for the target student's performance and progress.

1. The student is called on in the room and expected to answer (i.e., prompts and cues are provided to assist the student's responses).
2. The student is expected to be an active and involved learner.
3. Expectations are based on the student's current level of performance.
4. The student has an opportunity to respond actively.
5. The student understands the consequences of not achieving the expected standards of performance.
6. Objectives or goals for the instructional lesson are communicated clearly so that the student knows **what** is to be learned.
7. Desired or expected standards of performance are communicated clearly.
8. The teacher's expectations about use of time in the classroom are communicated clearly.
9. The student understands how to demonstrate mastery of the instructional goals.
10. The student understands the teacher's expectations for task completion.
11. The student understands the teacher's expectations for neatness.
12. The student understands the teacher's expectations for accuracy.
13. The student knows he/she is held accountable for correcting and completing unfinished work.

Component 3

Classroom Environment

An effective classroom environment is influenced by the extent to which classroom management procedures reduce disciplinary concerns, the extent to which instructional routines maximize productive use of time in the classroom, and the affective tone or climate in the classroom. Classroom Management refers to the kind of rules established to maintain appropriate behavior, how the rules are communicated, the system used to maintain appropriate behavior, and the emphasis placed on student accountability. Productive Time Use refers to the extent to which noninstructional routines are established and class time is used to increase academic activities. Class Climate refers to the extent to which the classroom atmosphere is characterized by cooperation, a pleasant atmosphere, and acceptance of individual differences. The following factors should be considered in making judgments about the presence and importance of the classroom environment for the target student.

Classroom Management

1. A small number of important rules (e.g., talking, out of seat) are selected and reinforced.
2. Expected behavior in the classroom is communicated through discussion of rules and routines.
3. Behavior that will and will not be tolerated is clearly communicated to the student.
4. Both examples and nonexamples of rules and procedures are used.
5. Classroom rules and routines are introduced at the beginning of the year.
6. The teacher maintains good eye contact with the student.
7. The student's compliance with the rules is continuously monitored.
8. Noncompliance or disruptive behavior is handled immediately.
9. Inappropriate behavior is used as an opportunity to reteach or reinforce behavioral expectations.
10. Reminders about expected behavior are given in advance of an activity (e.g., transition, field trip, assembly).
11. Nonverbal signals are used to redirect the student while teaching other students.
12. Praise is specific and administered contingently.
13. The student understands the consequences of misbehavior.
14. The student understands the classroom rules and routines.
15. There is a system to involve the student in the management of his/her behavior.
16. Behavioral disruptions are handled promptly.

Productive Time Use

1. The instructional routines for nonacademic class business (e.g., bathroom breaks) are understood and followed.
2. The physical space of the classroom is well-organized.
3. The student has easy access to high-use materials and supplies.
4. The student knows what to do when finished with assigned work.
5. The student knows how to get help when needed.
6. There is a sufficient amount of time allocated to instruction in the content area.
7. There is one academic, task-oriented focus in the classroom.
8. The lessons, including necessary materials and teaching aids, are prepared in advance.
9. The pace of instructional lessons is brisk, well-organized, and directed by the teacher.
10. Directions are clear, simple, sequential, and often written on the board.
11. Lessons begin and end on time.
12. Transitions are short and brief.
13. The student is given a warning for transitions between lessons.
14. Disruptions or interruptions are infrequent and held to a minimum.
15. Expectations about use of class time are communicated clearly to the student.

Class Climate

1. The classroom is a pleasant, friendly, happy environment (one in which the student is not obviously uncomfortable).
2. The classroom is supportive and accepting of individual differences.
3. Teacher-student interactions are encouraging, positive, uncritical, and emphasize the importance of student effort.
4. The student's opinions and concerns about the classroom are encouraged and valued.
5. The classroom is characterized by a cooperative rather than a competitive atmosphere.
6. There is some flexibility in changing teaching and behavioral procedures to meet the needs of the student.
7. The student is expected to respond and participate in the classroom.
8. Cues and prompts are used to assist the accuracy and frequency of the student's responses.

Component 4 Instructional Presentation

Instructional Presentation, a primary component of effective instruction, includes factors related to lesson development, clarity of directions, and checking for student understanding. Lesson Development refers to the presence of an adequate overview; the manner in which the lesson is explained, structured, and sequenced; the variety and richness of teaching examples, the clarity with which the lesson content is presented, the adequacy of guided practice opportunities and degree of teacher-student interaction, and the kind of feedback used. Clarity of Directions refers to the appropriateness of task directions, kind and amount of examples used, and degree to which task directions are repeated. Checking for Student Understanding refers to the method used to check the student's understanding, the timing of the checking, the degree to which cues and prompts (error correction procedures) are used to promote accurate responses, and the way in which the teacher interprets student inattentiveness. Consider the following factors in making judgments about the presence and importance of the instructional presentation for the target student.

Lesson Development

1. Prerequisite skills, previous lessons, or prior knowledge are reviewed prior to teaching new content.
2. Background information is provided to assist student understanding and interest and is relevant to the student's experience.
3. An overview of lessons (what is to be learned, how it is to be learned, why it is important) is provided.
4. The student's attention is focused during lesson presentation.
5. The student's attention is maintained during lesson presentation.
6. Modeling and teacher demonstration are used when appropriate to skills/content being taught.
7. Concrete examples are used in the instructional lesson.
8. There is a high degree of teacher-directed instruction on skills/content presented.
9. The necessary parts or distinctive features of new skills/concepts are specified clearly by the teacher.
10. A sufficient amount of detail/information is provided in the instructional presentation.
11. The key terms/ideas to be learned are clearly and directly taught.
12. The lesson explanation is presented in an organized, step-by-step manner.
13. A variety of teaching materials and strategies are used to explain the skills/content being taught.
14. Substantive teacher-student interaction (e.g., ask/answer questions, repeat directions, provide feedback) occurs.

Component 4: Instructional Presentation (continued)

15. Various cueing and prompting techniques are used to elicit accurate responses from the student.
16. Guided practice opportunities are provided.
17. Opportunities are provided for the student to explain the process or procedures.
18. The instructional pace is appropriate for the student's skill level and attention span.
19. Information is structured for the student in an appropriate fashion (e.g., advance organizers, review, guided practice, independent practice).

Clarity of Directions

1. The student's attention is gained before task directions are given.
2. Procedures for completing the task are specified clearly.
3. Task directions are logically sequenced.
4. The appropriate number of directions are given at one time.
5. Directions are of a reasonable and appropriate length.
6. Vocabulary in the directions is understood by or clarified for the student.
7. Directions are given in both an oral and a written format.
8. Examples of the steps the student must follow is provided through modeling.
9. Directions are repeated and stressed at difficult points.
10. The student begins work after all directions have been provided.

Checking for Student Understanding

1. Questions are frequently asked to check or test student understanding.
2. The student is asked to demonstrate his/her understanding by explaining the process used to solve problems.
3. The student's understanding of task directions is checked before beginning independent seatwork activities.
4. The student has had an opportunity to demonstrate his/her ability to perform the skill before beginning independent seatwork activities.
5. Initial problems are checked within the first ten minutes of independent seatwork activities.
6. There is frequent monitoring of the student's success rate on assigned activities.
7. Error correction procedures, such as cues and prompts, are used to lead the student to the correct answer and to increase the student's accuracy rate.
8. The student's errors are used to reteach skills or re-explain procedures.
9. The student understands how to get assistance when confused.
10. Student engagement and attention are monitored as indicators of student understanding.
11. The student's understanding or the appropriateness of the assigned task is checked before the student is assumed to have motivational difficulties.

Component 5

Cognitive Emphasis

Effective instruction emphasizes the development of thinking skills. Cognitive Emphasis refers to the extent to which varied lessons are planned for the purpose of teaching recall, reasoning, evaluating, and application skills; the extent to which thinking skills necessary to accurately complete a task or master a skill are modeled for the student; and the extent to which learning strategies are directly taught. Consider the following factors when making judgments about the presence and importance of the cognitive emphasis for the target student's instruction.

1. The lesson purpose is clear and understandable to the student.
2. Steps for mastering an objective are specified clearly.
3. The lesson purpose is identified in terms of thinking skills (e.g., memorizing, reasoning, concluding, evaluating) required for completion.
4. Lesson explanation emphasizes a step-by-step description of the process to follow to solve the problem.
5. The teacher models how to think through the steps involved in solving the problem (e.g., the mental operations involved).
6. The student is asked to explain the process involved in solving problems or completing the work.
7. The teacher asks the student to "think aloud" while working the problem in order to identify problem areas.
8. Appropriate learning strategies (e.g., how to memorize, how to study) are taught.

Component 6

Motivational Strategies

Encouraging student motivation is an important component of effective instruction. Teachers understand the importance of motivation for learning and consequently use varied techniques to increase student motivation. Motivational Strategies refers to the enthusiasm with which the lesson is presented, the extent to which the lesson is interesting and varied, the kind of motivational strategy (extrinsic vs. intrinsic orientation) used, and the student's sense of self-efficacy. Consider the following factors in making judgments about the presence and importance of motivational strategies for the target student.

1. The lesson is presented with enthusiasm.
2. Teacher interest for the lesson content is communicated clearly.
3. The instructional routine or presentation is varied.
4. Interesting and age-appropriate materials and assignments are used.
5. Assignments are varied to heighten student interest.
6. The rationale for the lesson is communicated and reinforced for the student.
7. The value of learning is emphasized in addition to task completion.
8. Goal-setting techniques and procedures are used to direct student motivation and to provide feedback.
9. Student involvement and choice are used in developing motivation and self-directedness (e.g., contingency contracting opportunities for self-evaluation, self-monitoring, and charting).
10. Reward systems and social reinforcers (external orientation) are effective.
11. Individual instructional conferences are held regularly with the student.
12. The student believes he/she can do the assignment.
13. Lesson content is relevant to the interests and background of the student (i.e., highlights the student's personal experience).
14. Tasks are at the student's appropriate instructional level.
15. Teacher-student interactions are positive, encouraging, and emphasize the importance of student effort.
16. The student has been asked his/her preference for how to learn the skills/content.
17. The student's success rate is carefully monitored.
18. The student is held accountable for completion of quality work.
19. The student understands the consequences of not completing work accurately.
20. The student understands the importance of the assigned tasks for real-life performance.
21. The student is encouraged to perform (e.g., shown how, told he/she can do the work).

Component 7

Relevant Practice

Students spend approximately 70% of their school days engaged in seatwork practice activities. In order for this time to be effective in promoting positive academic outcomes for a student, the student must engage in Relevant Practice. Relevant Practice includes the amount of practice opportunity on relevant tasks with appropriate instructional materials. Practice Opportunity refers to the amount and kind of practice. Task Relevance refers to the extent to which the practice activities are related to the lesson presented and are important for attaining the instructional goal in addition to the student's success rate. Instructional Material refers to the academic and affective appropriateness of the assigned materials for the target student to attain the instructional goal. Consider the following factors which make judgments about the extent to which relevant practice is present and important for the target student.

Practice Opportunity

1. Sufficient opportunity for practice of skills/content exists.
2. Practice opportunities are provided until the student makes only infrequent careless mistakes.
3. Student performance is carefully monitored by the teacher during seatwork (e.g., frequent checking, circulating among students).
4. Prompts, cues, or modeling (i.e., error correction procedures) are used rather than calling on another student to provide the answer.
5. There is an established system for the student to get help when needed.
6. The student asks for assistance when needed.
7. Homework is regularly assigned, checked, and reviewed with the student.
8. A minimal level of competence is ensured before a homework assignment is given.
9. Assigned tasks are designed to include drill work, practice, generalization, and application opportunities.
10. Drill work and repeated practice are used to reinforce skills and build student accuracy.
11. Speed work is provided to achieve automaticity of basic skills.
12. Varied materials and different applications of the skills taught are used to assist with generalization.
13. The kind of practice (guided or independent) is appropriate for the student.

Task Relevance

1. The instructional scope and sequences are specified clearly.
2. The student is placed appropriately within the instructional sequence.

3. The student has acquired the necessary prerequisite skills to complete the task successfully.
4. Practice activities (assigned tasks) are at the appropriate instructional level for the student.
5. Task directions contain sufficient detail so that the student understands what to do during practice.
6. Practice activities are related directly to the student's instructional goal.
7. Practice activities are related directly to the lesson presentation explained and demonstrated by the teacher.
8. Activities are important for student learning and, consequently, are not simply "busy work."
9. The student's engaged time is high during seatwork practice.
10. During the beginning stage of practice on a new skill, the student's performance is checked by the teacher. The student's success rate is 70% or better.
11. The student is able to complete assigned tasks independently during practice. If so, the student's success rate is between 90-100%.
12. The teacher's measure of student achievement reflects the material the student has been taught.

Instructional Material

1. The student can read the assigned curriculum materials.
2. Assigned materials are at the appropriate skill level for the student.
3. Format of assigned materials is easy to understand, clear, and uncluttered.
4. The student can read and understand written directions on the assigned materials.
5. There is ample writing space for the student.
6. The student is assigned the right amount of work.
7. Varied instructional materials are used (e.g., workbook, tapes, films, peer interaction).
8. Necessary modifications for successful completion of assignments are made (e.g., length decreased, concrete aids and cues provided).
9. Materials are age-appropriate, interesting, and visually appealing.
10. Instructional materials provide ample practice and reinforcement of skills to be mastered.
11. Materials include feedback on student responses during practice. If not, feedback is provided by the teacher.
12. Supplemental materials are provided to help the student attain mastery.
13. Requirements for successful completion of independent assignments are at the appropriate level for the student (e.g., cognitive processing demands, number of steps/skills involved).

Component 8

Informed Feedback

Informed Feedback includes feedback and alternative, corrective procedures. The provision of specific, informative feedback and corrective procedures is a necessary step in successfully instructing students. Feedback refers to several characteristics of effective feedback, the type of feedback, and the student's understanding of the feedback. Corrective Procedures refers to the kind of alternative teaching strategies employed, the amount of supervised practice and monitoring provided, and the extent to which student accountability is stressed. Consider the following factors when making judgments about the extent to which informed feedback is present and important for the target student.

Feedback

1. Student performance is monitored continuously.
2. Feedback about performance is provided within a reasonable period of time (e.g., before beginning a new lesson).
3. Explicit feedback is provided about the student's behavior.
4. Feedback informs the student about which answers are correct or incorrect.
5. Feedback informs the student why answers are correct or incorrect.
6. Feedback provides enough information for the student to make the necessary corrections.
7. Feedback is frequent enough to motivate the student and provide necessary corrections.
8. Feedback is provided in a way that encourages the student to try again.
9. Process feedback (i.e., prompts and cues to assist student response) rather than terminal feedback (i.e., answer given) is provided.
10. Task-specific praise about the student's academic work is provided.
11. An appropriate rationale for the kind of feedback provided the student is present.
12. The student knows which skills are mastered and which need additional review.

Corrective Procedures

1. Re-explanation is provided (not simply providing the student with the correct answer) when the student is confused or makes mistakes.
2. Specific suggestions to correct student errors are provided.
3. Varied alternative teaching methods to reteach and correct the student's confusion or mistakes are used.
4. After correction of errors, the student has an immediate chance to practice the procedure or execute the task correctly.
5. Practice opportunities are provided until the student makes only infrequent careless mistakes.

6. The student receives correction or assistance before errors are practiced over and over.
7. Prompts and cues to increase the student's accuracy of response are used.
8. Student performance is monitored closely in order to prescribe activities to correct errors.
9. The student is required to correct his/her mistakes.

Component 9

Academic Engaged Time

In order to achieve optimally, students must be engaged and actively involved in completing academic tasks and responding to oral and written questions. Both the amount of opportunity to engage in academic work and the rate of student engaged time during completion of the work influence achievement levels. Student Involvement refers to the opportunities the student has to respond and the extent to which the student actively participates in academic activities. Contextual factors may influence student involvement. Maintenance of Student Engagement refers to the extent to which varied teacher behaviors or systems are used to facilitate time on task. Consider the following factors when making judgments about the presence and importance of academic engaged time for the target student.

Student Involvement

1. The student maintains eye contact and follows the lesson presentation and class discussion.
2. The student participates in the lesson presentation (e.g., asks/answers questions, engages in teacher-student discussion).
3. The student is involved in the large group via choral responses, direct questioning, and substantive interaction.
4. The student begins, attends to, and completes assigned work.
5. The student spends little time sitting and waiting.
6. The student returns to work promptly after a break.
7. Many opportunities for the student to respond exist.
8. The student has an equal opportunity to respond when compared with classmates.
9. The teacher probes for correct responses from the student rather than moving on to another student or simply providing answers for the student.
10. The student is expected to be an active and involved learner.
11. The student understands the lesson content.
12. Class size does not interfere with the amount of oral student responses needed for student progress.
13. Class composition does not interfere with the amount of teacher-student interaction needed for the student.
14. The kind of task assigned affects the student's engaged time.
15. Seatwork tasks promote active academic student responding (e.g., tutoring, peers, aides, computers).

Maintenance of Student Engagement

1. The student's attention is gained and focused during instruction.
2. The student's attention is maintained during instruction.
3. Student understanding of the assigned task is checked when the student is unengaged.
4. The teacher scans the class and keeps the student engaged in learning activities.
5. The student is directed to another activity when he/she finishes early and is merely waiting.
6. The student is given frequent reminders if he/she dawdles.
7. Varied questioning techniques to engage the student are used.
8. The teacher circulates among the students during seatwork assignments to check work and assist the target student.
9. The teacher checks work, discusses, reviews, and provides corrective feedback to the student.
10. Student performance is monitored to ensure an appropriate success rate.
11. There is a system or procedure for the student to follow if he/she finishes early.
12. Alternative academic options for the unengaged student exist.

Component 10 Adaptive Instruction

Instruction needs to be modified to accommodate individual needs and differences. Adaptive Instruction refers to the extent to which there is a systematic effort to modify instruction, the options available for modifying instruction, and the degree to which the effectiveness of the modifications is communicated to the student. Consider the following factors when making judgments about the presence and importance of adaptive instruction for the target student.

1. There is a systematic effort to adapt instruction so that the student can experience success.
2. The teacher is knowledgeable about different instructional modifications for teaching the student.
3. The teacher is knowledgeable about many ways for dealing with student behavior or affective concerns.
4. Varied options for modifying the curriculum are available.
5. The teacher is willing to use alternative methods, materials, or goals for the student.
6. Different materials, alternative teaching strategies, increased practice opportunities, or alternative group placements are considered when a student fails to master an objective.
7. Lesson pace is adjusted to variations in the student's rate of mastery.
8. During monitoring, the teacher continuously diagnoses errors and prescribes activities to correct incorrect responses.
9. Tasks are modified until the student is no longer making errors or is making only infrequent careless mistakes.
10. Effectiveness of the alternative interventions is monitored.
11. The student is informed of his/her instructional needs.
12. The student is held accountable for his/her performance and quality of work.
13. The student's needs, in addition to the curriculum to be covered, are used to plan and modify instruction.
14. The student receives additional review and practice in areas of difficulty.

Component 11

Progress Evaluation

Effective instruction includes continuous monitoring and systematic follow-up planning for a student, that is, Progress Evaluation. Monitoring Student Progress refers to the kind of student performance data collected, the frequency with which the student's performance is monitored, and the system used for record-keeping and communicating to the student. Contextual factors may influence the amount of monitoring for an individual student. Follow-Up Planning refers to the basis for making subsequent instructional decisions for the student and the extent to which reviews are planned systematically. Consider the following factors when making judgments about the presence and importance of the progress evaluation conducted for the target student.

Monitoring Student Progress

1. The teacher circulates among students during seatwork activities to provide assistance and to check work.
2. The student's success rate is monitored regularly by the teacher.
3. The student's engaged time is monitored carefully by the teacher.
4. Student progress is monitored through both error analysis on daily work and unit tests.
5. The teacher frequently asks the student questions to assess his/her understanding.
6. Direct and frequent evaluation (curriculum-based) of student progress toward mastery of objectives is used.
7. There are enough evaluation items to measure student progress accurately.
8. Student progress is monitored regularly to make adjustments in teaching strategies that better meet the needs of the student.
9. Records of student progress are maintained.
10. The student is frequently informed of his/her performance and progress.
11. The student understands both his/her current level of performance and the instructional goal.
12. Opportunities exist for the student to self-evaluate his/her work.
13. Opportunities to review seatwork assignments are provided.
14. Homework is checked, graded, and reviewed with the student.
15. Student-teacher ratio does not interfere with frequent monitoring of the student's performance.

Follow-Up Planning

1. Predetermined criteria exist for mastery for the student.

2. Student performance data are used regularly to make instructional decisions for the student.
3. Progress through the curriculum depends on mastery of instructional objectives.
4. Review of skills/content is provided.
5. Review and maintenance activities are planned systematically (e.g., daily, weekly, monthly).
6. A sufficient amount of review is provided for the student.
7. Student errors trigger the need for corrective or adaptive instructional procedures.
8. The student is held accountable for the quality of his/her work and use of class time.
9. Teacher-student ratio does not interfere with the teacher's effort for individualizing subsequent instructional planning.

Component 12

Student Understanding

Student Understanding refers to the accuracy with which the student understands the instructional goal and interprets task directions and the processes required to complete the assignments. Consider the following factors when making judgments about the extent to which student understanding is present and important for the target student.

1. The student can explain the purpose of the lesson.
2. The student can explain accurately the task directions (e.g., page numbers).
3. The student can explain accurately how to do problems/assignments (e.g., articulates the steps, processes to follow).
4. The student understands the consequences of inferior quality work.
5. The student demonstrates understanding of the task before beginning or within the first few minutes of independent practice opportunities.
6. The student's success rate is moderately high (e.g., 75%) during initial instruction.
7. The student's success rate is high during independent practice activities (e.g., 90-100%).
8. The student's performance is monitored to ensure an appropriate success rate.
9. The student is aware of his/her lack of understanding or confusion with the assigned work.
10. The student knows specific strategies to employ himself/herself in completing the assigned work.

Component 13

Expectations and Attributions

Parent expectations are defined as future aspirations or current expectations for their children's and adolescents' academic performance and school productivity. Attributions are defined as parents' reasons or explanations for their children's and adolescents' performance in school. Expectations and Attributions may be communicated explicitly or implicitly to children and youth. Consider the following factors when making judgments about the extent to which expectations and attributions are present in the student's home environment.

1. Completing schoolwork is part of the daily routine.
2. High expectations for completing schoolwork are set for the child.
3. The parents and child talk about the benefits of education and learning.
4. The child is encouraged to have an "I can do it" attitude.
5. The child is encouraged to work hard in school, to put forth a lot of effort, and to try again.
6. Someone helps to organize the child's assignments and use of time if needed.
7. The child's efforts are praised in the home.
8. The importance of attendance and participation in the classroom is discussed with the child.
9. The child is told that he/she can do a good job in school.
10. The child is told he/she is expected to behave and perform at school.
11. The child is told why school is important.
12. Goals for the child's school performance have been set.
13. The child knows that learning is a priority in the home.
14. The child knows that school performance is improved through effort and practice.
15. The child understands parental expectations for his/her school performance.

Component 14

Discipline Orientation

Discipline Orientation refers to parenting methods used to control children's behavior and to assist children to acquire appropriate behavior. It includes parental standards, rules, kinds of parent-child interactions, monitoring, and supervision. Consider the following factors when making judgments about the presence of discipline in the student's home.

1. The child's academic progress is monitored at home.
2. The child's out-of-school activities are monitored.
3. The parents believe in discussion and joint decision making about their child's behavior and use of time.
4. The child's use of out-of-school time is monitored.
5. Rules are enforced in the home.
6. The child's progress and improvement are recognized by parents.
7. The child is encouraged to work for good grades.
8. The child's schoolwork is viewed on a weekly basis by the parents.
9. Clear and consistent limits for the child's behavior (e.g., where he/she can go, how late he/she can be out, with whom he/she can go) are set.
10. Parents are clear about how best to discipline their child.
11. If the child's grades are poor, parents are not inclined to express negative emotion, ignore the situation, or punish the child.
12. It is easy for the parent to find ways to recognize the child's accomplishments.
13. The child completes his/her chores or responsibilities at home.
14. The child knows and follows the requests/rules most of the time.
15. The child understands the household rules and expectations.

Component 15

Home Affective Environment

Home Affective Environment refers to the emotional tone in the home with a particular focus on the parent-child relationship. It consists of the degree to which the relationship is characterized by parental acceptance, nurturance, encouragement, involvement, and emotional responsiveness to the child's needs. Consider the following factors when making judgments about the presence of home affective environment for the target student.

1. The parents and child have a good and generally positive relationship (e.g., they get along pretty well).
2. The parents and child plan time together for fun activities.
3. The parents talk about the child's strengths.
4. The parents try to understand the child's needs and point of view.
5. The parents and child spend some relaxing time together on a regular basis.
6. The child is encouraged to try new things (e.g., take risks in learning).
7. When the child has a problem, the parents and child discuss it.

Component 16

Parent Participation

Parent Participation refers to parents' involvement in meaningful activities related to their child's schooling, and can occur both at school and home. It includes volunteering at school, attending school functions, communicating with educators, reinforcing their child's school instruction, and engaging in learning activities in the home. Consider the following factors when making judgments about the extent to which parent participation in schooling is present for the target student.

1. Opportunities are created for the child's interests.
2. The child uses reading, math, and writing skills at home.
3. Schoolwork is discussed in the home.
4. The child is asked about school each day.
5. The parents communicate with school personnel (e.g., notes, phone calls, conferences).
6. The parents cooperate with the school on issues of schoolwork, discipline, and attendance.
7. The child's language errors are corrected.
8. The parents discuss books, stories, and television programs with the child.
9. The child is encouraged to read for fun.
10. The parents participate in school activities and attend school functions.
11. The child has opportunities to solve problems.
12. What the child learns at school is reinforced at home.
13. The parents stay informed about the child's progress.
14. In the home, the child and parents make learning fun (e.g., using math in cooking, reading to find an answer to a question).
15. The child and parents have conversations about daily events in their neighborhood or the world.
16. The child and parents read (e.g., adults read in the presence of the child, the child reads for pleasure, adults read to the child).
17. The child has reading materials available (e.g., own books, uses the library).
18. The child sees adults and siblings learning new things.
19. The parents and child talk about the meaning of new words in the home.

Component 17

Structure for Learning

Structure for Learning refers to the structure of the home environment and how the environment can be manipulated to encourage and provide assistance to the child in completion of schoolwork and school-related activities. It includes such areas as homework, adult/sibling assistance with schoolwork, establishment of home routines, and monitoring of out-of-school time use. Consider the following factors when making judgments about the extent to which structure for learning is present for the target student.

1. Regular routines and schedules exist and daily activities are organized.
2. Resources for studying/learning are available.
3. Someone is available to help the child learn at home.
4. When the child is having trouble with homework, assistance is available.
5. The child's homework is checked for accuracy and completion.
6. The parents would provide rewards for homework completion if directed by school personnel.
7. The parents limit the amount of television watching.
8. The child has a place for studying.
9. The child knows someone is available to help with schoolwork.
10. The child participates in other activities (sports, music, clubs) during out-of-school hours.
11. A routine for homework completion (e.g., quiet study place, scheduled time to complete homework) has been established.

APPENDIX C

Supplemental Teacher Interview Questions

This section provides a list of additional questions for some of the *TIES-II* components to be used when interviewing the teacher. The examiner is encouraged to supplement the Teacher Interview Record in Appendix A with these provided questions, to reword these questions, and to create other questions to help in rating the *TIES-II* components.

Component 1

Instructional Match

Instructional Diagnosis

1. Tell me how you determine _______'s instructional needs.
2. What did you need to know about _______ before beginning this lesson or unit?
3. How do you determine _______'s skill level?
4. When do you communicate these rules?
5. How do you handle classroom disruptions due to inappropriate behavior?
6. What are the necessary prerequisite skills needed to perform the task?
    a. Which of these has _______ mastered?
    b. Which of these might cause _______ trouble?
7. How is the average student in your class doing on the task?
8. How discrepant is _______ from the average performance?
9. How many different activities are there in the lesson?
10. What are the various cognitive/thinking demands of the task (e.g., discrimination recognition, recall, sequencing, categorizing, inferring, explaining, applying)?
11. What must the student know in order to be successful on the lesson, task, or unit?

Instructional Prescription

1. How do you determine the appropriate instructional level for _______?
2. How does your instructional planning differ for _______ than for your other students?
3. What methods are most effective to use with_______ to meet your objectives?
4. What materials are most effective to use with _______ to meet your objectives?
5. How is your instructional planning affected by the district's adopted curriculum objectives?
6. How is your instructional planning affected by the district's adopted textbooks/materials?
7. Tell me how you plan instruction for _______.
8. What skills do you want the student to learn?
9. What is your instructional goal for _______?
10. Do _______'s learning characteristics affect your choice of tasks or materials? If so, how?
11. What is the sequence of activities that you believe will be necessary for _______ to cover the skill?
12. Is there anything special or different you have to do when teaching _______?
13. What are _______'s characteristics that interfere with successful mastery of your objectives?
14. What are _______'s characteristics that assist him/her in meeting your objectives?

Component 1: Instructional Match (continued)

15. Are the scope and sequences of the material clearly specified?
16. Are facts/concepts/skills sequenced from simple to complex?
17. Why did you select this skill or goal for ________?
18. Was there anything about ________'s personality or the way ________ learns that affected your choice of materials, the kind of assignment, or the teaching method?
19. When you planned the lesson for ________, did you think any parts of the lesson would be difficult for him/her? If yes, what parts? How do you plan to handle these tough spots?
20. Do you have a specified scope and sequence? Do you have a planned list of instructional objectives (i.e., skills) to be taught?
21. What is your goal for ________? Is the goal the same for all your students? How does the goal vary for ________ from the other students? Why was this goal selected?

Component 2 Teacher Expectations

1. What are your expectations for ________?
    a. For task completion?
    b. For accuracy?
    c. For neatness?
2. How do you communicate your expectations to ________?
3. How do you determine what is a realistic expectation for ________?
4. What do you want ________ to do if he/she finishes early, is confused, and/or needs to ask for help? How do you communicate these to ________?
5. What are the usual things you do when ________ does not do a good job on his/her assignment?
6. What is the usual thing you do if ________ does not complete assigned work?
7. What is an acceptable standard of performance for ________?
8. How do you check to see that ________ reached this standard?
9. Did ________ know what you expected of him/her during this lesson? How do you know?
10. Do you have a set standard that you will require ________ to reach by the end of this unit?
11. Do you have the same expectations for ________ as you have for your other students? If not, what is different?
12. What expectations do you have for ________ regarding classroom participation?
13. What happens if any of your expectations are unfulfilled?
14. What do you do if ________'s work is of poorer quality than you expect?
15. What are the consequences if ________ 's behavior is not acceptable?

Component 3

Classroom Environment

Classroom Management

1. What rules do you have for appropriate behavior in your classroom?
2. Why are these rules important?
3. How do you communicate these rules to your class?
4. When do you communicate these rules?
5. How do you handle classroom disruptions due to inappropriate behavior?

Productive Time Use

1. What routines do you have for nonacademic business—things like:
    a. Use of materials,
    b. Bathroom breaks,
    c. Use of free time, and
    d. Transitions between lessons?
2. How do you communicate these routines to your class?

Component 5

Cognitive Emphasis

1. What learning strategies have you taught _______ to use in completion of his/her tasks?
2. How much have you stressed thinking skills with _______?
3. What success have you had in teaching _______ how to think through the process or operations of a task?

Component 6

Motivational Strategies

1. How do you motivate _______?
2. Which methods have been most effective?
3. When are additional motivational techniques necessary?
4. What kinds of motivational techniques have you tried?

Component 7

Relevant Practice

Practice Opportunity

1. Are practice and review of content material provided? How frequently?
2. Are these appropriate practice opportunities that lead to mastery of skills/concepts?
3. Is there enough practice for a slow or disabled learner (if applicable)?
4. Can the student complete the assigned practice work independently?
5. Is regular feedback provided so that the probability of error is reduced in independent practice activities?
6. Do you ever give homework? If so, when? What do you give for homework?
7. How much of the student's day is spent in seatwork activities?
8. How much time is scheduled for practice?
9. What kinds of tasks do you use for _______ to practice?
10. Do you plan to include speed and accuracy drills?

Task Relevance

1. How is the content of the lesson presentation consistent with your stated objectives?
2. How is the independent seatwork practice assignment consistent with the content of the lesson presentation?
3. How is the independent seatwork assignment important for the student's attainment of the stated goal?
4. Are any of the practice assignments "busy work" and/or used to control the student?
5. How does the assigned work review or reinforce the student's skill in the most efficient way?
6. How are practice opportunities directly related to desired outcomes?

Instructional Material

1. What is the student's success rate on the assigned instructional materials?
2. What materials are used for practice?
3. Are any supplemental materials available or used? If so, which materials?
4. What kinds of instructional materials have been used with _______? Which are most or least effective?

Component 9

Academic Engaged Time

1. What do you expect the student to do if he/she needs help with seatwork?
2. If you notice that ________ is off task, how do you refocus his/her attention?

Component 10

Adaptive Instruction

1. If ________ does not understand the assignment, despite several attempts to re-explain the task, what do you do?
2. What alternative teaching strategies or modifications do you routinely consider implementing for ________?
3. When ________ is experiencing ongoing difficulty in learning the intended material, what strategies do you employ to facilitate his/her performance?
4. What provisions have you made in the physical arrangement of the classroom to accommodate ________?
5. If ________ cannot stay with the pace of group instruction, how do you solve this problem?
6. Do you use any special teaching techniques for ________ to do well on this task?
7. What alternative teaching strategies are used for ________ when he/she fails to master an objective?
8. What kinds of modifications are feasible to meet ________'s individual needs?
9. Which of these modifications are feasible for ________ in your room:
    - a. Change in materials?
    - b. Change teaching methods?
    - c. Change the task?
    - d. Change the goal?
    - e. Provide extra practice, reviews?
    - f. Change feedback procedures?
10. Which modifications have been effective with ________?
11. How have you evaluated these methods to know which ones are successful with him/her?
12. Does ________ require any modifications to complete the task successfully?

Component 11

Progress Evaluation

Monitoring Student Progress

What kinds of records do you keep to monitor ________'s progress?

Follow-Up Planning

1. How do you decide whether ________ needs to be retaught the skill or is ready to move on to another skill?
2. Did ________ meet your objective? How did you determine this?
3. What do you plan to teach next? Why have you chosen this?
4. What factors do you take into account in deciding whether to move on to the next unit (curriculum objective or skill)?

APPENDIX D

Supplemental Student Interview Questions

This section provides additional questions for some of the *TIES-II* components that a team member may want to ask to understand the student's instructional experience. The examiner is encouraged to supplement the Student Interview Record in Appendix A with these provided questions, to reword these questions, and to create other questions to help in rating the *TIES-II* components.

Component 1

Instructional Match

1. Does your teacher know what things you are good at?
2. If you are having trouble with an assignment, does your teacher help you or give you something you are better able to do?

Component 2

Teacher Expectations

1. Does your teacher call on you in class?
2. Do you answer questions in class?
3. Does your teacher expect you to get good grades?
4. Does your teacher think everyone can do well in school? Does your teacher treat all students as if they can learn?
5. Do you know what the teacher expects of you?
6. What happens if you don't do what the teacher wants?

Component 3

Classroom Environment

1. Do you know the rules in your classroom?
2. Do most students follow the teacher's rules?
3. What does your teacher do if you do something wrong?
4. Do you go to your teacher for help if you need it?
5. Are you busy working all day or do you have a lot of free time?
6. Do you know what to do when you finish your work? What do you do when you finish your work?
7. Does your teacher like you to participate in the classroom?
8. Do kids in the class help each other out?
9. Do you like being in this class?
10. Do all students get a chance to speak in class?

Component 4

Instructional Presentation

1. Does your teacher explain things so that everyone understands?
2. Does your teacher make sure you understand the lesson before you work on your own?
3. Does your teacher make sure you've learned something before moving on to something new?
4. While you are working, does your teacher check your work to make sure you're doing it right and that you understand?
5. Does your teacher tell you what he/she's going to teach before he/she starts teaching?
6. Are your teacher's directions easy to follow and understand?
7. Do you ask your teacher questions when you don't understand?
8. Does your teacher tell you what you are going to learn on an assignment?
9. Does your teacher explain how to figure out a problem?
10. Does your teacher teach you how to learn different things?

Component 5

Cognitive Emphasis

1. If you don't understand something, does your teacher tell you the answer or help you figure it out yourself?
2. Do you know any strategies or "tricks" to make this assignment easier?

Component 6

Motivational Strategies

1. Are your teacher's lessons interesting?
2. Do you do the same thing every day or do you get to try to do all different things?
3. Are you able to do your work?
4. Are your assignments too easy or too hard?
5. What does your teacher do if you do all your work correctly?
6. Are students rewarded for doing good work in your class?
7. Does your teacher know what your favorite things are to do?
8. Does your teacher say nice things about your work?

Component 7

Relevant Practice

1. Do you have enough time to finish all of your work?
2. Is your work related to what your teacher teaches you?
3. Does your teacher check your work when you are working alone?
4. Do you ask your teacher for help if you don't understand?
5. Do you have enough time to practice new things you learn?
6. Do you work hard when you are working alone?
7. Do you have enough work to do?

Component 8

Informed Feedback

1. Does your teacher tell you how well you are doing?
2. Does your teacher help you when you do things wrong?
3. Does your teacher help you correct your mistakes?
4. If you make a mistake, does your teacher explain why what you did was wrong?
5. Do you know what you need to do better in?
6. If you don't understand something, does your teacher explain it again or in a different way?

Component 9

Academic Engaged Time

1. Does your teacher keep you busy working?
2. If you finish your work before other students, does your teacher give you other things to do?
3. Do you get to answer as many questions as the other students?
4. Do you get to ask your teacher as many questions as you'd like?
5. If your teacher asks you a question and you don't know the answer, does he/she help you figure out the answer or does he/she ask somebody else?
6. Do you pay attention when your teacher is teaching something?
7. Do you know what to do when you finish your work? What do you do when you are finished with your work?
8. Does your teacher make sure you are doing your work?

Component 10

Adaptive Instruction

1. Does your teacher try to explain things many different ways?
2. If you don't understand something, does your teacher go slower or explain it in a different way?
3. Do you know what things you need to learn how to do better?
4. Does your teacher try hard to help students who don't understand their work?

Component 11

Progress Evaluation

1. Do you learn a lot in school?
2. When everyone is working alone, does your teacher walk around and make sure everyone understands and is doing what they're supposed to?
3. Does your teacher ask you if you understand what you're doing?
4. Do you know how well you are doing in class?
5. Are you able to check your work by yourself?
6. Does your teacher go over things you already know before teaching you something new?

Component 12

Student Understanding

1. Do you know why the teacher teaches you certain things?
2. What happens if your work is not good enough?
3. Do you understand how to do your work?
4. Do you understand the directions your teacher gives you?
5. Do you know things to do to help you finish your work better?

APPENDIX E

Resources

Some resources for observation, interviewing, consultation, home-school relationships, and instructional interventions are provided for further exploration.

Observation and Interviewing

Hughes, J. & Baker, D.B. (1990). *The clinical child interview.* New York: Guilford.

Lentz, E.F. & Shapiro, E.S. (1986). Functional assessment of the academic environment. *School Psychology Review, 15*(3), 346-357.

Sattler, J.M. (1988). *Assessment of children* (3rd ed.). San Diego, CA: Author.

Shapiro, E.S. (1989). *Academic skill problems: Direct assessment and intervention.* New York: Guilford.

Shapiro, E.S. & Kratochwill, T.R. (1988). *Behavioral assessment in schools: Conceptual foundations and practical applications.* New York: Guilford.

Consultation

Conoley, J.C. & Conoley, C.W. (1989). *School consultation: A guide to practice and training.* New York: Pergamon Press.

DeBoer, A.L. (1986). *The art of consulting.* Chicago, IL: Arcturus Books.

Kratochwill, T.R. & Bergan, J.R. (1990). *Behavioral consultation in applied settings.* New York: Plenum Press.

Phillips, V. & McCullough, L. (1993). *Student/staff support teams (SST).* Longmont, CO: Sopris West.

Rosenfield, S.A. (1987). *Instructional consultation.* Hillsdale, NJ: Erlbaum.

Sprick, R., Sprick, M., & Garrison, M. (1992). *Foundations: Establishing positive discipline policies.* Longmont, CO: Sopris West.

West, J.F., Idol, L., & Cannon, G. (1989). *Collaboration in the schools.* Austin, TX: Pro-Ed.

Zins, J., Curtis, M.J., Graden, J.L., & Ponti, C.R. (1988). *Helping students succeed in the regular classroom.* San Francisco: Jossey-Bass.

Home-School Relationships

Christenson, S.L. & Conoley, J. (1992). *Home-school collaboration: Enhancing children's academic and social competence.* Silver Spring, MD: National Association of School Psychologists.

Kaplan, L. (1992). *Education and the family.* Needham Heights, MA: Allyn & Bacon.

Liontos, L.B. (1992). *At-risk families and schools: ERIC Clearinghouse on Educational Management.* Eugene, OR: University of Oregon.

Procidano, M.E. & Fisher, C.B. (1992). *Contemporary families: A handbook for school professionals.* New York: Teacher's College Press.

Swap, S. (1993). *Developing home-school partnerships: From concepts to practice.* New York: Teacher's College Press.

Instructional Interventions

Algozzine, B. & Ysseldyke, J.E. (1992). *Strategies and tactics for effective instruction (STEI)*. Longmont, CO: Sopris West.

Graden, J.L., Zins, J.E., & Curtis, M.J. (1988). *Alternative educational delivery systems: Enhancing educational options for all students*. Silver Spring, MD: National Association of School Psychologists.

Great Falls, MT Public Schools. (1993). *Responding to individual differences in education (RIDE): Elementary version* (2nd ed.). Longmont, CO: Sopris West.

Great Falls, MT Public Schools. (1993). *Responding to individual differences in education (RIDE): Secondary version* (7th ed.). Longmont, CO: Sopris West.

Lovitt, T., Fister, S., Freston, J., Kemp, K., Moore, R.C., & Schroeder, B.E. (1992). *Translating research into practice (TRIP)*. Longmont, CO: Sopris West.

Paine, S.C., Radicchi, J., Rosellini, L.C., Deutchman, L., & Darch, C.B. (1983). *Structuring your classroom for academic success*. Champaign, IL: Research Press.

Rhode, G., Jensen, W.R., & Reavis, H.K. (1992). *The tough kid book: Practical classroom management strategies*. Longmont, CO: Sopris West.

Schumaker, J.B., Hazel, J.S., & Pederson, C.S. (1988). *Social skills for daily living*. Circle Pines, MN: American Guidance Services.

Stephens, T.M. (1992). *Social skills in the classroom* (2nd ed). Odessa, FL: Psychological Assessment Resources.

Stoner, G., Shinn, M.R., & Walker, H.M. (1991). *Interventions for achievement and behavior problems*. Silver Spring, MD: National Association of School Psychologists.

Thomas, A. & Grimes, J. (1990). *Best practices in school psychology II*. Silver Spring, MD: National Association of School Psychologists.

Wang, M.C. (1992). *Adaptive education strategies*. Baltimore, MD: Paul H. Brookes.

West, J.F. & Idol, L. (1993). *Effective instruction for difficult to teach students*. Austin, TX: Pro-Ed.

Other Sopris Publications of Interest . . .

Strategies and Tactics for Effective Instruction (STEI)

Arm yourself with alternatives for teaching the "tough to teach"

Bob Algozzine and James Ysseldyke

Effective teaching is a complex process. Research has shown that there are effective ways to plan, manage, deliver, and evaluate instruction. Yet, tactics that work with some students often do not work with others. Teachers will find *Strategies and Tactics for Effective Instruction* (*STEI*) a treasure chest of information on teaching tactics that work.

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• Training Available • Cost: $29.95

The Tough Kid Book

Practical Classroom Management Strategies

Ginger Rhode, William R. Jenson, and H. Kenton Reavis

Do you hate going to work on Mondays because of a small number of students who make your teaching life miserable? Do these students make you doubt your effectiveness, as well as wonder why you ever went into education? Do these "tough kids" argue with you continuously, throw tantrums, lack motivation, appear socially immature, and ruin the learning environment for other students? If you answered "yes" to any of these questions and want **practical solutions**, this book is for you.

If you are preparing to teach (and thus work with tough kids), this book will be a survival manual for your first years of teaching. If you are a practicing teacher, this is a resource they should have used when you were in college. *The Tough Kid Book* is a resource for both regular and special education teachers. The research-validated solutions included in this book are designed to maximally reduce disruptive behavior in tough kids without big investments on the teacher's part in terms of time, money, and emotion. The solutions also provide tough kids with behavioral, academic, and social survival skills. This publication contains a wealth of ready-to-use strategies and identifies other commercially available, practical resources for teachers who want even more in-depth assistance.

Use *The Tough Kid Book* to make the classroom a pleasant, productive environment for you and your students. Learn to enjoy teaching and Monday mornings again—turn tough kids into **great kids**!

• Training Available • Cost: $17.95

Administrative Intervention

A School Administrator's Guide to Working with Aggressive and Disruptive Students

Donald D. Black and John C. Downs

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Using the *Administrative Intervention* process, the administrator models appropriate behavior, shows the student how to be successful, engages in a consensus-building process regarding appropriate and inappropriate behavior, and provides constant feedback during the intervention.

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Teaching Self-management Strategies to Adolescents

Keep disruptive students on task and reduce behavior problems

K. Richard Young, Richard P. West, Deborah J. Smith, and Daniel P. Morgan

Teaching Self-management Strategies to Adolescents is a program for students with poor planning skills, who lack a realistic perception of how well they are doing academically, and who fail to complete work. It is a behavior change program that provides at-risk students with techniques that will help them be more successful academically. Self-management strategies help keep disruptive students on task and reduce behavior problems while simultaneously shifting the responsibility of managing behavior from the teacher to the student.

Students who receive self-management training depend less on their teachers for guidance, reinforcement, and control than they did prior to training. The first two chapters give background information on behavioral self-management and the teaching/learning process. The remaining chapters contain instructional lessons (each with objectives), an outline of the contents to be covered, specific examples, student evaluation materials, and suggested homework assignments.

• Training Available • Cost: $17.95

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- ○ *Administrative Intervention*
- ○ *Teaching Self-management Strategies to Adolescents*

No student assessment can be considered complete without an assessment of the student's instructional needs in the context of classrooms. This contention appears so obvious that few would disagree with it. Yet, in practice, most psychoeducational decisions for a student are made without a careful analysis of the instructional environment. *The Instructional Environment System-II* (*TIES-II*) is designed to assist education professionals in a systematic analysis of a target student's instructional environment, which includes both school and home contexts.

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